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ORIGINAL ARTICLES.

A DEMONSTRATION OF SOME OF THE CAUSES OF ROTARY LATERAL CURVATURE OF THE SPINE.

Clinical Lecture delivered at the Jefferson Medical College Hospital.

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In connection with the anomalous muscular development of the case that Professor Brinton brought before the class last week, I desire to introduce the subject of rotary lateral curvature of the spine, or scoliosis, as introductory to the study of individual cases. You will remember the man had an enormous development of the muscles all over the body, produced, probably, by following some form of the Swedish movements, for his method of bringing into prominence any desired muscle was through the opposing force of other muscles. There is one thing I would ask you to observe, in explanation of the principle upon which this form of gymnastic exercise depends. If I raise my arm simply, I would not do much towards developing my biceps muscle, for it thus simply raises the weight of the forearm. If, however, I will the triceps muscle at the same time, to resist the upward movement produced by the biceps, I find that it is quite another thing, and that the biceps must necessarily begin to develop increased power in proportion to the resistance caused by the triceps, and the triceps develops as the increase in the strength of the biceps. This is a principle I wish you to bear in mind while I am speaking of lateral curvature. The presence of correlation of muscular force prevents a normal body from being deformed, and I believe its reëstablishment will correct deformity, if applied rationally, and prior to serious bone deformity.

I propose devoting this hour to an introduction, as it were, to the subject; that is, to calling your attention to the essential points of the disease in general, rather than dwelling upon the points presented by a single case. I will bring a model before you, and study with you the production of lateral curvature, and then, at another clinic, I will bring some cases before you to illustrate the various conditions present. I desire at each of my lectures to give to you a kernel of thought, some one thing so condensed as to carry conviction with it, and impress it upon your memories. The essence of to-day's lecture I have written on the board as my text: "Rotary lateral curvature of the spine may be produced by any *persistent* alteration of the relation normally existing between the axes of the hips and shoulders." Now, as a result of the statement made here, I may call your attention to the existence of deformities which produce deformity—or, putting it in another way a little more perplexing, to deformity-producing deformities. Take, as an illustration, flat foot on one side, which will shorten the stature of one side of the body, making one leg shorter than the other, and producing an obliquity of the hips, thus, altering the relationship of the pelvis to the shoulder, curvature follows. If I have a shortened leg, from any cause, on one side, the planes of the pelvis and shoulders diverge and converge in proportion to the asymmetry, and deformity is produced. These deformity-producing deformities are all important as factors in the production of rotary lateral curvature. I shall not occupy much of your time this morning by calling attention to the normal characteristics of the spine, presuming a thorough knowledge on your part of normal structures. The spinal column is made up of a number of small bones or vertebræ, so arranged that they tilt on one another at the will of the person, by the exertion of muscular force in the desired direction. What holds up this movable spinal column is the action of muscles which, by contracting, force each vertebra against its fellow, making the column rigid. This acts exactly like the rigging holding a mast of a ship. The mast is made up of one piece, it is true, but this piece is composed of a mass of fibres which are held up in position by guy-ropes which firmly draw down upon both sides. If the sail gets off to one side, the drag upon the mast is so heavy that there is a curvature of the latter, and the guy-ropes upon that side become relaxed, while those upon the other are firmly contracted. So in the human body; as I bend my body to one side, the muscles of the convex side are elongated and on the stretch, and those on the concave side shortened by muscular contraction. Now here comes the point. If by muscular action alone a person can be put into a deformed position, if there is persistency in maintaining the deformed position, eventually there is produced a deformity of the bones also. It is this deformity of the bones which is essentially the condition in lateral curvature as a result of some previously existing cause. This deformity of the bones I believe is of a secondary character; the change in the muscle was primary. By means of a model I purpose showing you the formation of lateral curvature of the spine in the normal spinal column, so that you may understand, when you see cases, why certain lesions exist.

The Side-Saddle.—I will now call your attention to a factor in the production of lateral curvature which has not received the recognition which it deserves. I realize that I am open to criticism in my statement, but I believe that the side-saddle used by horsewomen is an important factor in the production of lateral curvature. But you say that horseback riding is said to be the best form of exercise. That is true, if you refer to it as taken by yourselves, but not when taken as woman, from the dictates of custom, is compelled

to take it. On this young man, sitting in the position of a woman when occupying the side-saddle, I place this rod in the axis of the shoulders, and another in the axis of the pelvis. You will see that the two are in different planes. A rotation of the vertebræ always accompanies this twisting of the body. Certain muscles are placed at a disadvantage by the position which the patient assumes. However, before this position will produce a deformity, there must be a condition of preceding feebleness, and a persistent or frequent resort to the deforming position.

In recognition of the possibility of the side-saddle being injurious, there are in use side-saddles made with the horns on both sides, so that the rider can from time to time dismount and change sides. There are other side-saddles made with horns that are changeable, to facilitate the accomplishment of the same object and not have the unsightly horns on the side not in use so conspicuous. While this is a step in the right direction in at least the recognition of the liability to produce deformity, it does not go far enough.

I will not permit patients with rotary lateral curvature to use the side-saddle at all, and being loath to deprive some of them of the exhilaration of this form of outdoor exercise, I have had recourse to the use of the bifurcated skirt. The principal objection to its use lies in its making the wearer more conspicuous, and it is therefore difficult to have adopted in or near the city.

The method of riding astraddle, or in the man's saddle, is so entirely different that much of the previous instruction is useless, and riding must be learned all over. Patients who have adopted this method tell me that it is far more easily learned, that they feel safer, and have the consciousness of the horse's movements being freer, from the absence of the necessarily tight girths of the side-saddle.

There has recently been introduced in this city a riding-school where instruction is given to girls and women wearing the bifurcated skirt, and I hope the time is not far distant when a rider with a bifurcated skirt will attract no more attention than a woman on a bicycle.

Faulty Positions in School.—I wish to make another demonstration. Here is a very common fault in the position of children at school. If a leg of a table is in the way, they throw their feet around to one side, but have the shoulders parallel to the table, and as a result there follows a rotation of the spine from the change in the planes of the shoulders and pelvis. If this change is persistent, especially if the child is debilitated, a rotary lateral curvature will be apt to develop.

Improper Positions in Bed.—It is stated that one of the most prolific causes of lateral curvature is the position of the body in bed, and I have seen illustrations corroborating the statement. I will put our patient to bed to illustrate this fact, in the position that I have had the privilege of seeing, and in one case I saw upon the bed seven pillows, while the young lady was lying in such a position that lateral curving of the spine could not help resulting. Should the patient occupy this position for seven or eight hours each night, a deformity will result which will become difficult to treat, because of the faulty habit that must be overcome, as well as to reëstablish the muscular functions which are normally engaged in preventing rotary lateral curvature.

One Short Leg.—Inequality in the length of the legs is another prolific cause in the production of lateral curvature. When I repeat the statement that has been made, that four-fifths of the human beings have an inequality in the length of their limbs, you can perceive what a field there is here for the production of this deformity from this factor alone. I will shorten this boy's limb by 1½ inch by means of a block of wood placed under one foot. A lateral curvature of the spine follows, as I readily demonstrate to you by means of the rod. The shoulders are straight, but one side of the pelvis is tilted, and as a result, the spinal column deviates from the straight position. Likewise, sitting with one buttock raised. This is not an uncommon thing to see in girls, who are fond of sitting on one foot on the chair. The change in the position of the shoulders and hips will naturally produce a deviation in the position of the spinal column.

There are other causes of lateral curvature. Thus in patients who have lost a leg, and in those who have an exaggerated development of the muscles on one side, due, for instance, to fencing, producing excessive weight on that side, a curvature often follows. I have seen illustrations of this also in the blacksmith, where the right arm has been used to excess. The same thing will take place if an arm is lost, and the excessive weight of a tumor on one side, or the presence of an enlarged liver, will, it is said, likewise act as the distorting factor. Artificial limbs should be so made that the weight, as well as the length, will be equal to that of the other side, so as to prevent the production of this curving. At the base of all these cases, however, there must be a constitutional defect or feebleness. This feebleness, while it is clearly apparent in defective muscular development, is only in part in these structures, for the osseous system also is at fault, permitting changes in these structures to take place.

Many writers advocate the theory of the primary lesion being in the bones, and while there is plenty of room for doubt in this matter, there is no doubt whatever that the proper development of the muscular system will prevent and correct very decided deformity.

The character of the deformity of the vertebræ, clearly shown in pathological specimens, is that not alone of compression, but of decided torsion. The anterior aspect of the body of a vertebra shows a wedge-shaped condition, due to unequal compression of one side, and this wedge shape increases in intensity, as it were, as each vertebra approaches the point of greatest curvature. The spinous processes are bent and twisted, in proportion to the deviation of the bodies from the normal position, and a factor in this twisting may be found in the strong ligaments that attempt to maintain the correct position. So altered is the appearance of the vertebræ that have been submitted to the forces that produced the deformity, that there is clearly indicated a preëxisting softened condition of the bones, to have permitted such changes without fracture.

When we remember the period at which this curvature is especially prone to manifest itself, that between the ages of 8 and 16 years, we can readily understand that, in many patients, the osseous system is not then prepared to resist the excessive strain that is placed upon it.

If one's muscle can be greatly over-developed, why

cannot we train our lateral curvature patients to develop those muscles which shall correct the deformity? There comes a time, however, when the deformity of the bone becomes so pronounced and fixed that the correcting of the deformity is out of the question. Now, as our model bends over, you see the vertebræ more or less prominent, but all in a straight line. If now, in a patient, instead of this, you see the line imperfect, with the position of the ribs distorted, you may make up your mind that the deformity is permanent. If the patient now lies face downward, you see the spinal column in a straight position, and as I place a rod on the shoulder blades, the points are at an equal height. This will not be observed in cases of lateral curvature. If we could get a transverse section of the chest, the outline would be depressed posteriorly on one side, and unduly prominent on the other, elongated laterally.

In rotary lateral curvature of the spine there is a deformity of the thorax, produced by the rotation and resulting deflection of the ribs, which puts the diameters of the chest in very different positions. The ribs are thrown out posteriorly, protruding on one side, while there is a bulging of the opposite side anteriorly. A deformed hip will produce a deformed spine, and this a deformed thorax. Remember, then, that orthopædic surgery is for the *prevention*, as well as for the correction, of deformities.

The reason that a deforming position may be indulged in by many persons for a more or less prolonged time without being followed by rotary lateral curvature, is that this position is not *persistently maintained*, and because the muscles which naturally prevent and correct deformities are all in proper relationship and active.

To produce rotary lateral curvature of the spine, therefore, there must be an enfeebled muscular system, as well as a persistent maintenance of an altered or abnormal relationship between the axes of the hips and shoulders.

I do not feel prepared to condemn corsets or tight lacing because more than three-fourths of all cases of rotary lateral curvature occur in girls, for the reason that there are far more girls without than with scoliosis, and they are all addicted to corsets and more or less improper clothing. But I do most emphatically say that in cases of this deformity, where it is desired that the muscular action should be developed, no clothing should be used which restricts in the slightest degree the full natural play of muscles.

The mother or the patient will at first complain most bitterly of the impossibility of holding the back up, and refer to the backache—all of which is evidence against, rather than in favor of, the use of the corset. The relief from these disagreeable features may be expected just as soon as the muscles which were made to hold up the spine are acting as they undoubtedly were intended.

For precisely the same reason, let me deprecate the use of any kind of brace or support in the early stages of this deformity. If you are, as I wish you to be, convinced that muscular action is the principal factor in the prevention, and as well in the correction, of the beginning curvature, permit nothing whatever to compromise the efficient and judicious development. There are scattering cases where a modified plan of procedure is required, but I am to-day alluding to the average or typical cases, believing that if you fully appreciate the principles, you will readily apply them to the needs of individual cases.

I deprecate the rest plan of treatment, either prone or supine, because I believe that the girl's system does not require increased feebleness, but increased strength, to resist the progress of the deformity. The deformity has been produced by constitutional debility, and the best method of overcoming that is by judicious exercise, made applicable to the special needs of the patient's condition.

The application of mechano-therapy, or applied gymnastics, to the treatment of rotary lateral curvature, is too large a subject for me to do more than broach in the few remaining minutes. Let me say, that your prescription of exercise should be given with the same care and judgment that you would prescribe any other powerful remedial agent, remembering that harm and serious damage may be done by improper use, and great benefit derived from a skilful application.

How are we going to go about judging the extent of the lateral curvature? The method adopted in the study of a case here is as follows: The seventh cervical vertebra is a very important point to bear in mind in determining the deformity, because it is a decided landmark, easily recognized. We mark this with a blue pencil, and from this run a line down to the middle point of the sacrum, touching each point over the spinous processes with the pencil. If the column is straight, every prominence of the vertebræ will be in the line of the string. If I draw a line at right angles to this, at the point of the apices of the scapulæ, they should be on a level. Again, taking the acromion processes, and holding a string across the back, at right angles to the line of spinous processes, I find in normal cases that they are upon a level. Another way of corroborating the condition is to suspend plumb lines of equal length from each shoulder, and note how near the weights come to the floor on each side. A strip of sheet lead may be used for the purpose of learning the curve of the spine. Starting at the seventh cervical vertebra, and bending it with the fingers to make it correspond to the curve of the spinous processes, and tracing down the back, I am able to get the curvature of the back. Laying this on a sheet of white paper, I mark the curve by means of a pencil. This is sufficiently accurate for all points of clinical recording. I might go farther, and mark on the line the point of each vertebra, but this is usually unnecessary. I can mark this curve on paper with different colors, and thus record the condition of the curves at the time of each of the subsequent measurings. There is a still more satisfactory way of recording the condition of the spine, and that is by means of photography, for it clearly and accurately shows the depression of the scapulæ, the prominence of the vertebræ and the depression of the ribs, and every detail of what I term "expression" of the deformity.

It is my experience that photography is invaluable in the study and accurate record of cases of deformity, and especially that form whereby the flash light is available. It is applicable to the privacy of one's office, and thereby avoids the exposure of the patient to other eyes than those of her medical adviser.

I feel that I have to-day given you only an insight into the subject of rotary lateral curvature; but

what I have said will be of service throughout the winter, in the study of the condition and treatment of individual cases.

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SALIENT FEATURES OF THE OPERATION FOR CLEFT PALATE.

A Clinical Lecture Delivered at the Chicago Medical College, Medical Department of the Northwestern University, January 26, 1882.

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The little patient now being anæsthetized suffers from a congenital cleft of the palate which extends through the uvula and velum and some distance into the hard palate — about through the horizontal plate of the palate bone, but not involving the superior maxilla.

On inspection, the parts appear as if there were no soft palate, the side flaps being retracted by muscular tension, leaving a wide, inverted, V-shaped opening, through which is visible the posterior and superior walls of the naso-pharynx, with their covering of adenoid glandular tissue. In severer cases, the fissure may extend through the entire roof of the mouth, and may be conjoined with hare-lip. The operation is known as staphylorophy when the cleft involves the soft palate only, or extends but little into the hard palate, and osteoplasty when the palate process of the superior maxilla is so deficient as to necessitate the Fergusson procedure of drilling off edges of bone to bring together in the center.

True cleft-palate is always congenital. The so-called acquired cases differ therefrom in presenting unequal, ragged or incomplete cleft, such as would be produced by the destructive ulcerations of syphilis. Heredity seems to be an important factor in congenital cases, as it is prone to repeat itself in families, often skipping one or more generations, to reappear, or diverging into collateral branches. The symptoms consist of inability to swallow perfectly and to talk properly, a disability, of course, which varies according to the extent of the cleft. On account of the difficulty in phonation, the operation for closure of the cleft should always, when possible, be performed early, before the child has learned to talk in an imperfect manner; otherwise, even though the cleft be closed later, much difficulty is experienced in teaching correct speech. It should, therefore, be performed between the age of one-and-a-half and three years. The age of this patient is two-and-one-half years, and she has just commenced small talk.

It is not our purpose to speak of this operation in detail. It is one which has interested the greatest surgeons of the day, and which will be found described at length in all text-books of surgery. But our experience has taught us that there are certain points essential to obtain a good result—that is, perfect primary union of the two sides; and it is these salient features of the operation that we will emphasize as we proceed.

It is important that the general condition of the patient be good; that the season of the year should be one that will not likely derange the health of the patient — that is, preferably, not during the heated term of summer. The bowels should be opened freely the day before the operation by the administration of castor oil the night preceding this. Special care should be taken to avoid vomiting caused by the anæsthetic by forbidding any breakfast on the morning of the operation. You can readily understand that the whole success of this long and tedious operation will depend upon securing primary union, and that this preliminary treatment is calculated to have the health of the child favorable to secure such union.

Fig. 1.—Author's Modified Staphylorophy Needle.

For anæsthesia in operations about the mouth, chloroform is often preferred to ether, because its administration can be more interrupted; but children with cleft palate are apt to be generally feeble, so we emphatically consider ether the safer anæsthetic for prolonged use. But as in this case, one can commence with chloroform, because of its greater rapidity and pleasantness of action, and continue, as soon as unconsciousness is secured, with ether.

As with most other operations in the mouth and throat, the patient should be placed in Rose's position; that is, with the head pendant from the edge of the table, and the shoulders elevated by a small hard pillow, so that blood will gravitate into the naso-pharynx, and not into the wind-pipe. In this position, at times when hæmorrhage is freest, the patient can be rolled upon the abdomen, and the blood allowed to flow from the mouth and the nose.

In our opinion, there is only one gag that is suitable, and that is Mussey's modification of the Whitehead gag. It has a tongue-depressor attached, and it is absolutely necessary that by this means the tongue be held depressed at the same time that the mouth is gagged open. The tongue-depressor of the Whitehead gag is attached by a hinge and ratchet-joint, which easily gets out of order, and detracts from the value of the mechanism. In the Mussey gag the tongue-depressor is a part of the same piece, but by force it can be bent to a different angle if required.

Many and complicated needles have been devised for the purpose, among which we may mention Prince's needle as ingenious, but rather complicated. All that is necessary is a curved needle mounted in a handle, as illustrated in Fig. 1. This needle is often kept in the shops, but is never accurately and correctly made. The curve should be much more acute than is usually supplied, and the eye of the needle as near as possible to its point. These may seem like very small details, but the matter of the needle is one of the most important features for successful operation, inasmuch as it is sufficiently difficult to place the sutures with a perfect needle, and with a faulty needle it may be impossible.

Sponges, which have been carefully disinfected and mounted in long, firm sponge-holders, must be in readiness.

We come now, our patient being thoroughly under the influence of the anæsthetic, to the first and absolutely necessary step, the division of certain muscles. We believe this should be the first step of the operation, and not, as generally advocated, the last step, for the reason that firm and accurate coaptation of the edges can be made only after the perfect relaxation of the muscles thereby produced. Having introduced the gag, you will notice the wide aperture in the roof of the mouth, and that it is seemingly impossible to draw together the two sides of the palate. This is by reason of the constant contraction of the palatal muscles. If one were to draw the two sides together forcibly by means of stitches under the partial relaxation produced by the anæsthetic, the stitches would only be ripped out at the first effort of the child at crying or coughing or swallowing. Perfect relaxation of the velum only can assure to us complete primary union of the parts. The muscles to be divided on each side are the tensor palati, the levator palati, the palato glossus, and one of the palato pharyngei. The last named muscles constitute, as you know, the anterior and posterior pillar of the fauces respectively. The tensor palati arises on each side at the base of the internal pterygoid process, and, descending, its tendon winds around the hamular process, which can be felt by the tongue just to the inner side of the upper third molar tooth, and then spreads through the body of the velum. The levator palati has its fibres distributed lying just posterior to the tensor. A puncture, therefore, through the velum, commencing at the point of the hamular process, and following its curve about three millimetres upwards, will sever the tendon of the tensor. Then the knife, with its cutting edge directed upward, should have its handle depressed, withdrawn, reintroduced (in the same opening), the cutting edge directed downward, and handle elevated, cutting in this manner the posterior surface of the velum more widely than the anterior surface, so severing as many fibres as possible of the levator. Having done this, you will notice how much more easily the two sides can be approximated.

We now raise the velum on each side and snip with scissors the anterior pillar, and on one side the posterior pillar. It is claimed by Lawson Tait that division of the posterior pillars is liable to be followed by atrophy of the palate, presumably from division of the blood supply. This result, however, we would not consider possible if only one posterior pillar is divided, because the arterial supply would then be left intact on one side, and it would supply collateral circulation, if necessary.

You have noted that the division of these muscles, especially the puncture to the inner side of the hamular process, has been followed by considerable hæmorrhage, due to the division of a small artery at this point. It is recommended by some authors that this puncture be made by the galvano-cautery to prevent the hæmorrhage. We have used this measure, but do not consider it satisfactory, as it is followed by considerable soreness and inflammation, which endangers the primary union. The hæmorrhage is not likely to be dangerously profuse, but the galvano-cautery point-electrode may be at hand to still an excessive hæmorrhage by introduction subsequently into the aperture.

We will next pare the edges. Here again I would emphasize the need for thorough work. It has been suggested that the edges may be split instead of pared, with the idea of saving tissue. To this we would say that after division of the muscles there is abundance of tissue, and that splitting of the edges does not result in the same satisfactory raw surface. In paring the edges the uvula on one side may be grasped with a pair of forceps, the part drawn tense, a very sharp, curved bistoury introduced at the border of the hard palate, and the edge pared off in one piece from the top to the bottom. Usually, however, it is necessary to pare the uvula separately with scissors. One should not hesitate to pare off sufficient tissue to obtain perfectly raw edges.

In this case we must also provide for closing the small part of the hard palate which is likewise cleft. For this we must loosen tissue to slide to the median line by making lateral incisions through the mucous membrane and periosteum, and by incision around and behind the anterior end of the cleft, extending to the bone both on the buccal and nasal surface. Then, by means of a pereosteal elevator, we raise the periosteum from the bone, from the lateral incisions to the edges of the cleft, which part of the edge must also be well detached from the underlying bone and fascia and properly freshened wherever it is to join the one of the opposite side. (Fig. 2.) These two flaps can now be brought together in the median line. The mucous membrane will subsequently be reformed over the denuded bone left by sliding the flaps away from the lateral incisions.

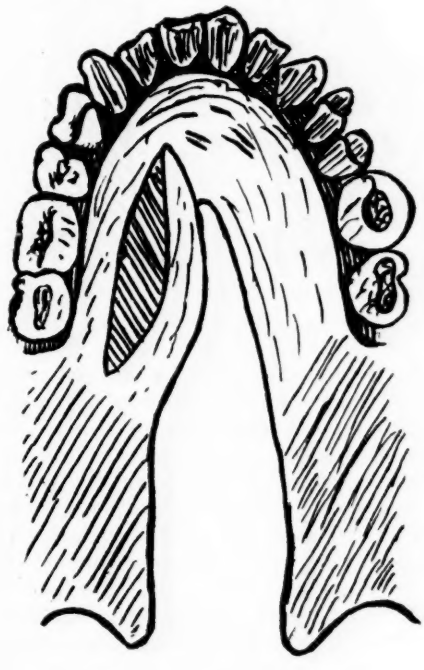

Fig. 2.—Flap prepared on one side only.

This has been known as the Warner-Langenbeck operation, since these operators laid special stress on the advantages of denuding the bones of periosteum as well as mucous membrane. If this is carefully done, the posterior palatine artery, which descends through the posterior palatine foramen, and runs anteriorly in its groove close to the alveolar border, can be lifted from its bed and made a part of the flap. Irregularities of the bone-surface will, however, necessitate some breaks in the periosteal layer

as elevated. The method may be used for closing quite extensive clefts of the hard palate, provided the fissure is not very wide, in which case one cannot obtain sufficient width of flap from the narrowed borders.

For the latter class of cases Ferguson advocated the separation, by boring and chiseling of sufficient of the bony edges to bring together in the centre to close the cleft. This procedure appears unnecessarily formidable, apart from the fact that with very wide cleft—the cases with which the ordinary flap operation is inadequate, the bony edges are likewise too scanty to afford a reasonable prospect of success.

For such wide clefts the soft flap method recently proposed by Davies-Colley[1] of Guy's Hospital commends itself. Figures 3 and 4 will convey his idea.

Fig. 3.—After Davies-Colley.

Next the introduction of the sutures, by far the most difficult part of the operation. We prefer silk sutures and consider them much superior to silver wire and shot, as they are softer in the mouth and seemingly do not produce the same amount of irritation and annoyance to the child. Two colors, white and black, should be used, as all the stitches should be passed before tying, and if these colors alternate confusion of the ends need not occur. The passing of the stitches in our early operations seemed like a "Chinese puzzle," and more than once we have been obliged to break our needle in order to free it from the silk and avoid repassing. The well curved needle having been threaded is introduced on one side, the patient being recumbent, from below upward or what would be, if the patient were upright, from behind forward. Fig. 5. To facilitate passing the needle the flap is held and drawn tense by forceps. The thread is then caught from the eye of the needle by a blunt tenaculum (Fig. 5), one end drawn all the way through and the needle passed back and off the other end. This procedure is easier than if the needle were previously passed in the reverse direction, as is usually recommended.

It would seem that you might repeat the same method on the other side with the lower end of the same

Fig. 4.—After Davies-Colley.

thread, but herein lies the puzzle, for if you do so you will find that you cannot withdraw your needle or liberate the thread. Having passed the suture on one side, one must pass a double thread on the op-

Fig. 5.

posite side, drawing up in like manner with a tenaculum the two free ends, which leaves the loop below (Fig. 6); the needle is then drawn back as before and disengaged. Then through the loop is passed the lower end of the single suture and by means of the double thread it is pulled through the opposite side. It is occasionally, but not often, possible by means of

[1] British Medical Journal, Oct. 25, 1890.

a lateral rectangular curved needle, similar to one used in gynecological operating, to pass the single thread through both sides with one sweep of the needle. The method above described is better because greater accuracy of margin width, and point of puncture is obtainable. In passing the stitches great care should be taken to engage sufficient tissue, not getting them too near the edge,and also to have them passed as nearly as possible at points opposite to each other. We have even found it desirable to gain sufficient margin to pass a suture through the very aperture that we had made in dividing the muscles, and do not consider this objectionable. The stitches should be passed at intervals of six to eight millimetres. We have passed here six stitches and we will now proceed to close the cleft.

Fig. 6.—End of suture, *a*, is next passed through loop, *b*, which is used only to draw end, *a*, through the flap of that side. Ends *a* and *c* are subsequently tied.

Before tying the sutures special care should be observed to see that the edges are clean and free from clotted blood. Then commencing anteriorly the sutures are tied first by means of a slip knot pushed down by the finger, the suture well-tightened, and again tied by an ordinary knot. As the sutures, one after another, are thus tied, see that the edges are not turned in so as to bring mucous membrane surfaces together instead of freshened edges.

If all of these points are carefully carried out, I think we can promise, in a majority of cases of cleft no more extensive than this, complete union at the first operation. The operation is usually regarded as an unsatisfactory one, because failure instead of success is the rule. Failure to unite by primary union is probably due to incomplete division of the muscles more frequently than to any other one cause; but the good health of the child, the careful paring of the edges and placing of the sutures are also essential points. If, however, complete union should not result at the first operation, we certainly should perform the operation a second or a third time, as the condition of the patient, when grown up, will otherwise be most deplorable. It is rare indeed with ordinary care and skill that partial union will not be produced at the first trial, and this will encourage both parents and surgeons to persevere to a complete result.

Concerning now the subsequent treatment of the patient. At the completion of the operation, before the patient has revived from the anæsthetic, a hypodermic of morphine should be administered. This to prevent, as far as possible, vomiting and excessive crying—in other words, to maintain quietude of the parts. We consider it best, although all authorities will not be in accord with this opinion, to keep the patient partially under the influence of morphine during the first three days, for the same reason. The stitches may be removed from the sixth to the tenth day. Some of them by the sixth day will have ulcerated out on one or both sides, but this matters not when primary union is secured, and if primary union is not secured the stitches will not hold the parts together after the third or fourth day. But as a matter of precaution, to give some strength to the newly formed union, the stitches may be left until the time stated. For their removal an anæsthetic should be administered.

NOTE.—Complete primary union—perfect closure of the cleft was secured in this case and a letter from the father written some weeks later states that the mouth has a natural appearance, swallowing is perfect and speech is being correctly acquired.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(*Continued from page 389.*)

There is lengthening of the arm in all the forms except the subclavicular; in the subglenoid there is the most lengthening, which is about an inch. In a fracture of the humerus, the depression below the acromion is not so marked as in luxation.

Calloway's test is to measure with a tape-line the circumference of the shoulder, passing the tape through the axilla and over the acromion process of each scapulæ, when it would be found that the injured shoulder would measure about an inch more than the sound one. This was said by Mr. Calloway to be an infallible test. There is one exception to this test, that is in a fracture of the neck of the scapula; but it is a very rare form of fracture. Dugas' test is to put the hand of the injured limb on the sound shoulder, then if the elbow touches the chest, no dislocation exists; while if it cannot be done, it proves the presence of a dislocation. This test will fail you in fat subjects. Another test is to take a flat board or ruler and place it along the outside of the arm; it will leave a space or opening between it and the arm when dislocated, but none when it is in its normal position. Another test is to measure the length of the arm from the acromion to the point of the elbow or the olecranon process and comparing it with the sound side.

When you can feel the head of the bone in a new position you can easily differentiate the different varieties of luxation, providing your subject is not too fat or muscular.

The principal methods of reducing shoulder-dislocations are: 1. Manipulation. 2. Extension and counter-extension, and 3, same as the second combined with leverage or manipulation.

Kocher's method by manipulation is to hold the elbow close to the side of the patient, take hold of the forearm and rotate it outwards, then elevate the arm and rotate forward and downward. The method that most frequently succeeds, is that of placing the heel in the axilla, using it as a fulcrum and the arm as a lever; in this way you pry, as it were, the bone into

its place. In addition to the leverage, you pull the arm downward and a little forward. If these methods fail, anæsthetize your patient and make extension directly outward from the body. You must be careful in old dislocations like these, because you may rupture the axillary artery or vein; and even the humerus has been fractured in attempts at reduction. Sir Astley Cooper has advised that a dislocation of over three months' standing should not be reduced, because of the danger, and that a very useful joint is finally acquired in its new position.

This man being now anæsthetized, the first thing to do is to break up the adhesions before you attempt reduction. We first try by extension and counter-extension, with the heel in the axilla. It is now reduced. There was no click when the bone went into the socket; but we do not expect it, on account of the glenoid cavity being filled with fibrous material. You notice that the prominence of the acromion has now disappeared. It will be bound up in the position employed in Dugas' test, and left a week before it is taken down. I find, also, by measuring that the length of the two arms is equal. I will apply a Velpau bandage, pinning it at all its reverses, because if this is not done, it would not remain twenty-four hours. It will be left as I have said for a week or ten days, when passive motion will be employed at intervals of every twelve hours.

CASTRATION.

This patient, aged 60, was operated on four months ago for the radical cure of hernia by Dr. McFarland. The operation was well done and the hernia has not been down since. Since the operation he has suffered with great pain in one of his testicles, and is unable, in consequence, to do his usual work. It is very liable that the cord has been caught in the cicatrix or that there is pressure on the spermatic nerves.

I will remove the testicle to-day; he has begged us for some time to do so, taking into consideration his age, and that his procreative power will not be destroyed should he desire to use it, we think it best to remove it. The celebrated Bob Ingersoll has said that if he would have power over some of the affairs of mankind, that instead of men shedding their hair when they get old, he would have them shed their testicles.

I will cut directly through the cicatrix of the incision that Dr. McFarland has made and on down to the testicle on the right side. In the operation of castration, some surgeons clamp the cord and ligate the artery, this is not a wise plan, because the artery may retract and we may have secondary hæmorrhage. I tie the whole cord and allow the ends of the ligature to hang out of the lower end of the incision to serve as a drainage. If I have failed to get high enough to relieve the nerve in the cicatrix, this operation will have done no good and the pain will continue as before; but I hope I have gone high enough. I now unite the edges of the incision in the scrotum with continuous sutures. You notice the ends of the ligature traverse the whole length of the wound and thus will drain it.

I dress it with the ordinary antiseptic dressings and hold them in position with a spica bandage of the groin. I will not touch this for four or five days unless his temperature rises. For retaining dressings, the crinoline bandage, which I have here used, is the best I know of, because there is some sizing in it and hence adapts itself better to the parts than an ordinary muslin roller.

A SPECIMEN SHOWING THE INCISION IN TRACHEOTOMY.

I have here a very interesting specimen I want to show you. There has been a patient in the hospital for several months suffering with syphilitic laryngitis; he would have paroxysms of dyspnœa which would be relieved with doses of tartar emetic. Last night the patient was breathing very hard and likely to expire when the resident physician, Dr. Graham, very properly opened the wind pipe. The patient, however, died some hours afterward, and I have here his larynx and wind pipe, which you can examine. I show you this specimen to impress on you never to allow a man to die for the want of air. The operations for this are laryngotomy and tracheotomy. In the former, the incision is made longitudinally through the skin, then transversely through the cricothyroid membrane. In the latter operation, an incision in the median line is made about an inch and a half in length, extending downward from the cricoid cartilage. The fascia, sterno-thyroid muscles and veins are pushed aside from the front of the trachea, the thyroid gland is pushed up, after which the knife is inserted in the bottom of the wound and the incision made upward, so as to divide two or three rings of the trachea. The latter operation was performed on the patient I have described, as you will notice by the specimen.

January 10, 1891.

SARCOMA ON THE LEG.

Gentlemen: I have a case to bring before you to-day which Prof. McCann showed you on last Tuesday. It is the boy with the large tumor on his left leg.

The history of the case is as follows:

Jonas Keller, æt. 17, was admitted to the hospital December 31, 1890. He has always been healthy prior to this trouble; there is no history of cancer or consumption in the family. He was struck on the calf of his leg with a harrow-tooth six or seven years ago, which left a small tumor that caused no pain or trouble until seven months ago, when it began to grow rapidly. At present there is a tumor the size of a child's head, which is broken down and presents a fungus-like and bleeding surface. It emits a very offensive odor and there is some discharge. He suffers much pain and requires anodynes at times.

The foregoing is a common history of a malignant tumor.

A sarcoma is a neoplasm growing from connective tissue. The cells of a sarcoma are of three varieties, viz.: 1. Round cells. 2. Spindle cells, and 3. Giant cells. They are all malignant and almost invariably return after their removal.

I operated on a lady in this hospital last August, one year ago, that had a large osteo-sarcoma on the thigh. I amputated the limb at the hip-joint, she made a good recovery, and died afterwards from typhoid fever. This is the specimen I now show you, which I removed, and it is certainly a very interesting one.

I have promised this boy to remove the tumor, but my impression is that the only thing that can be done is to remove the entire limb at the knee-joint; there is a slight enlargement of the glands in the groin. A contusion of a limb, or foot, or even a corn will sometimes cause the enlargements, which are

called by some "wax-kernels." Hence, I do not think that it is a secondary infection, but that the enlargement of the inguinal glands is due to the irritation. The tumor is movable on the bone; I will cut down directly on it to see if there is a capsule. I find it composed of a brain-like substance, which indicates its malignancy. I will give this boy another chance for the saving of his leg, and remove just the tumor because both the tibia and fibula are intact.

The best way to stop oozing after any operation is to apply a compress, wrung out of water as hot as can be borne with the hand. This allows a clot to form in the mouths of the vessels. Do not sponge a wound off, for in so doing you prevent a clot from forming. I think it a good plan to apply a solution of chloride of zinc, grs. 40 to an ounce of water, which is said to have some efficacy in preventing a return of the morbid process. The gastrocnemius muscle is nearly all destroyed by the tumor. After applying the zinc solution, I insert a large drainage tube in the bottom of the wound and unite it with cat-gut sutures. The usual antiseptic dressings are applied. We will watch the boy's temperature very carefully, give him an anodyne and wait for results. We will have the tumor examined microscopically by Dr. Matson, our professor of pathology, and see what kind of cells it is composed of. I think it is a round celled sarcoma.

SIMPLE FRACTURE OF THE LEG.

This patient, Mr. Baker, æt. 36, was admitted December 31, 1890. He fell from a ladder, the distance of three feet, alighting on his right foot, fracturing the leg. After this accident, with the aid of friends he walked two squares, then got in a buggy and came to the hospital. It is a simple fracture of the leg, but it is different from most fractures, so that it will be interesting for you to see. You notice the amount of ecchymosis.

Lead-water and laudanum was applied to reduce the inflammation and swelling. This discoloration might be mistaken by some for mortification, but it is only due to an extravasation of blood underneath the skin. There are also some blebs here which indicate a low state of vitality in the limb. The treatment has consisted of elevating the limb, putting it up in dry antiseptic dressings with plenty of cotton but no tight bandages applied. This man has been intemperate in his habits, and this is against the rapid healing of the fracture. Because he has been daily accustomed to using whiskey, we are giving him three tablespoonfuls of whiskey with three grains of quinine four times a day as a tonic. This is just a simple fracture of both bones of the leg. In a few days we will put it up in a plaster dressing.

AMPUTATION OF FINGERS.

This patient is a brakeman and had his right hand caught between the bumpers of the cars and came in here yesterday morning. It is important in examining a crushed hand to see if any of the joints are opened. I find that the metacarpo-phalangeal joints of the little and ring fingers are both opened and that their metacarpal bones are fractured. Our operation will be to remove the parts hopelessly lost. I am certain that if these fingers were allowed to remain they would slough, and hence, it is best to remove them at once. I have now amputated the two fingers and I bite off the fractured ends of the metacarpal bones with a bone forceps. We cannot do a regular amputation in these cases, but must get the flaps as best we can. We do not expect union by first intention in this case. I close the wound with wire sutures and apply the antiseptic dressings.

January 17, 1891.

OPERATION OF TREPHINING.

Gentlemen: We have here a patient who received an injury to his skull shortly after the Johnstown flood. It was not a severe wound, but after the injury he suffered from much headache, was unable to work and lacked precision in his movements. I have succeeded well in all my operations of trephining the skull. This is now the fourth operation within a few years and in every instance the patients have been benefited, even if I did not find what I trephined for.

I find a slight depression at the point of injury in this man's skull, and we may find a depression or a spicula of bone causing this man's trouble. We do not replace the button of bone as you know, and of which I have spoken to you about at previous operations of this kind. The history of the case is as follows:

S. C. Bowers, æt. 30, while superintending the construction of a bridge at Johnstown on June 8, 1889, which was a week after the great flood there, was working at the foot of the trestle and a spike mall fell from the top of the structure and struck him on the head in front of the parietal eminence, and on the right side of the sagittal suture, producing a large scalp wound which healed rapidly. The attending physician said there was also a fracture of the skull. He now complains of headache, blindness and dizziness on stooping and a bearing down pain at the seat of injury, as he expresses it. As the symptoms in this are general we will not try to localize the trouble in the brain, but will trephine directly over the seat of injury. The instruments I intend to use have been in boiling water for thirty minutes, and are now immersed in a solution of carbolic acid. The patient has been prepared for the operation by being given a cathartic last night and the bowels moved this morning. The scalp has been shaved, thoroughly washed with soap and water, then with ether and alcohol, and finally with the bichloride solution. We we will make the scalp wound in such a manner that it will drain well while the patient lies in bed and hence I will make a horse-shoe shaped incision. After turning back the scalp, I find the bone depressed at the seat of injury to the scalp. Regarding the trephine and its use I have spoken to you about at previous operations of this kind, and hence it will be unnecessary to do so to-day. I don't want to injure the dura mater at all, because it would add much to the gravity of the operation; otherwise, if carefully done with strict antisepsis, there is very little danger connected with trephining the skull. I have now removed the button and find no spicula on its internal surface. I next search with a probe around the trephined opening, but do not discover anything. I will not open the dura mater now, because if this operation does no good a subsequent one can be performed. I still prefer the metal sutures, although their use is falling into disfavor with foreign surgeons. We will use a few strands of catgut for drainage and allow it to remain a few days. In no other part of the body do wounds heal as rapidly as scalp wounds. I suppose it is on account of the great vascularity of this region. This man has lost considerable blood

during this operation, but I think it will do him good rather than otherwise. It is contended by some that the anæmia, which is produced by this operation, is one of the factors in benefiting the patients. After having united the incision with sutures I direct a stream of the bichloride through the wound to rid it of any blood clots. I apply the usual antiseptic dressings and bind them with a six-tailed bandage.

AMPUTATION AT THE ANKLE JOINT—SYME'S OPERATION.

This patient has been in the hospital for disease of the bones of the foot before this, and he is now brought here by Dr. McClellan, of Irwin, Pa. The patient is a miner æt. 50; nativity, Wales; his family history is good and he always has been a healthy man. On January 3, 1890, his physician opened some sinuses about the joint, and on September 3, 1889, there were some incisions made about the joint when he was in the hospital. A sanious discharge still continues from the sinuses. It appears to me as a tubercular disease of the bones of the tarsus. The ankle is swollen and a number of cloaca open on different parts of it. Inserting a probe I come down directly on carious bone. All these sinuses lead to the ankle joint. The man is very anxious that the foot be removed so that he may be able to go to work and support his family. I amputated a leg some time ago in which the ankle and leg were infiltrated, and numerous sinuses existed. I removed it at the ankle, treated the sinuses, and it healed very kindly. There is an osteoplastic operation on the foot, first introduced by a Russian surgeon in 1871. It consists in removing the diseased bones of the tarsus, the astragalus and os calcis, then sawing through the scaphoid and cuboid and also sawing off the ends of the tibia and fibula, and then bringing the two sawn surfaces together. In the resulting stump the patient walks on his toes as in talipes equinus. Twenty-one of these operations have been reported and with good results, four of which were in this country.

I would do the operation in this case if he had some other occupation. It is a good operation to perform on a lady. The incisions in this case are made as follows: The first one from the tubercle of the scaphoid bone across the sole of the foot to a point on the outer surface of the foot, just behind the prominence of the base of the fifth metatarsal bone; the second incisions are made from the ends of the first incision to the malleoli; and the third incision is made around behind the ankle and connecting the malleoli. I will perform a Syme's operation in this case. There is probably no other operation on the foot that leaves a stump so good and useful as that of Mr. Syme. The other operations on the foot are Hey's, which consists in amputating all the metatarsal bones and in sawing off the projection of the internal cuneiform bone. Chopart's, or the medio-tarsal, consists of removing all the tarsus except the astragalus and the os calcis. Pirogoff's consists in removing all the bones of the foot except the posterior part of the os calcis, which is brought into apposition with the sawn extremities of the tibia and fibula.

In the Syme's operation I insert the point of the knife at the external malleolus, then carry the knife across the sole of the foot and up to within about a half inch of the internal malleolus, then join these two extremities of the incision transversely across the front of the ankle joint, then to open the joint, sever the lateral ligaments. There is much discussion about the better way of dissecting out the os calcis. Some advise dissecting from above downward, and others from the heel backward.

The latter is the method advised by Mr. Syme. I rather think it is easier to dissect from above downward. I find the ends of the tibia and fibula are diseased, hence I will saw them off, and having done so, now I find them healthy looking. On the outer side of the leg is a sinus which I scrape out with a Volkmann's spoon, and wash it thoroughly with the bichloride solution. It is a great advantage to save the tense tissues covering the heel, which makes a good solid stump so that this man will be able to continue his occupation without much inconvenience. I unite the flaps with wire sutures and apply the usual dressings.

January 24, 1891.

Gentlemen: You will remember this first case I bring before you to-day as the man I had before you a week ago. I trephined his skull and removed a button of bone for some trouble he had since the Johnstown flood. He says that he is a good deal better. We found, I think, an adhesion of the dura mater to the skull, which I think was the cause of his trouble. This has been dressed but once since the operation. You see there is no suppuration. Every alternate suture has been removed, and I will now remove the remainder.

The second case I bring before you is the boy from whose leg I removed the large sarcoma two weeks ago to-day. You remember when we commenced the operation we were uncertain whether we would remove the tumor only or the leg, but on cutting down I found that the tumor was not adherent to the bone, and then I removed just the tumor. There is no sign of the return of the disease. The boy has good use of the foot and is able to bear some weight on the limb.

LIGATION FOR AN ANEURISM OF THE BRACHIAL ARTERY.

Gentlemen: Here is an exceedingly interesting case, the history of which is as follows: Curt Stickler, æt. 18, while carrying a cross-cut saw under his left arm, stumbled and fell, causing three teeth of the saw to puncture the inner side of his arm, the one causing but a slight wound, the second punctured a vein which bled profusely, and the third caused a deep wound, but did not bleed much. These wounds all healed in a week. The accident occurred the latter part of July, 1890. About six weeks ago he first noticed a swelling on his arm where the injury had been. Pain never was a symptom in the case; he gives a good family history.

It is important when you have a swelling like this to be sure what you have to deal with. This swelling is not as hot as an abscess would be. A distinct pulsation can be felt and is exerted equally in all directions. By making pressure on it with the hand it can almost be pressed away and on removing the compression it quickly returns to its former size. By putting my ear to the tumor a peculiar sound can be heard which is very characteristic. This is an aneurism of the brachial artery. An aneurism is a blood tumor communicating with the interior of an artery. A noted surgeon once received a patient with a tumor in the popliteal space which a number of physicians had examined, but were uncertain as to what it was.

The surgeon diagnosed it as an abscess, and was gratified, on plunging a knife into it, to see the pus flow from it. A short time afterward he received a similar case which he diagnosed as an abscess, and when he plunged a knife into it a quantity of blood poured out, proving that it was an aneurism. This mistake so weighed on his mind that he went and committed suicide by opening his own femoral artery. If the brachial artery had been wounded in this case, he might have bled to death before a surgeon could have reached him.

My impression is that the teeth of the saw ruptured the inner and middle coats of the artery and probably bruised the external coat, but not rupturing it. The bleeding that followed the accident was due, no doubt, to injuring a vein.

As to cause, there are two varieties of aneurism, viz.: Idiopathic and traumatic. The former being caused by diseases of the internal and middle coats of the vessels. Fusiform or tubular aneurism is one in which all the coats of an artery are dilated; it is usually found in the large arteries, as the aorta, iliac, and femoral. Sacculated aneurism is one in which there is dilation of only one side of the artery, caused by an injury or ulceration. There are two varieties of this form, one of which is where all the arterial coats give way and form the sac wall; this is known as "true aneurism," the other being one in which the external coat forms the wall of the tumor; this is also known as "false aneurism."

Dissecting aneurism, the third form, is rare and is found almost exclusively in the aorta, and in which the blood finds its way between the arterial coats. In the treatment of this aneurism compression could not be done on account of the pain produced by the nerves in this location.

We propose to ligate the brachial a little above the middle. The collateral circulation in the arm will be carried on by branches of the circumflex anastomosing with the recurrent radial, ulnar, and interosseous arteries. The old operation of ligation known as "Antyllus' method," is to cut down and apply ligatures, both above and below the aneurism. Anel's operation is to apply a ligature to the artery immediately above the tumor. John Hunter advised ligating at some distance above the aneurism, thus allowing some blood to pass through the sac by the collateral circulation. This is known as the "Hunterian method." Brasdor's method is to put a ligature on the distal side of the tumor when it is impossible to apply it on the cardiac side.

If you were to cut down in this tumor, you would find layers of fibrin, while in the centre you would find, still, fluid blood. Irish surgeons have advanced the treatment by pressure on the proximal side of the tumor, so as to retard the circulation and cause the contained blood to be deposited in layers of fibrin. This patient was sent here by a former student of this college. I propose to do the Hunterian operation in this case. There are three points to remember in the operation of ligation: 1, finding the sheath; 2, opening the sheath; 3, ligating the vessel proper.

For the first you must know the surgical landmarks and anatomical relations, making the incision in this case along the inner edge of the belly of the biceps. In doing the second, you take up the sheath with forceps, and cut a notch where you expect to apply the ligature. Sometimes the basilic vein will be in the way in this location. I have now cut down to the sheath. I open it and pass an aneurismal needle around it, armed with a catgut ligature. I now tie the ligature, making first a friction knot, and the second not too tight, because there is danger of rupturing it. You observe there is now no pulsation in the tumor. I will cut the ligature short, and sew up the wound with continuous sutures, believing I have done the operation antiseptically. Care must be exercised in ligating the brachial, because the median, ulnar or internal cutaneous nerves may be mistaken for the artery. Now the danger is that gangrene might result on account of the cutting off of the circulation to the arm. We must take good care of the arm—elevate it, and keep it warm by wrapping the whole arm and hand with thick layers of cotton and apply bottles of hot water around it. You will find the subject of aneurisms very interesting. Its history reads like a romance to those who are interested in the matter. Mr. Valentine Mott, a noted American surgeon, once tied the arteria innominata, and ever afterward spoke of this great operation as his Waterloo operation, although his patient died in a short time after the ligation. He has ligated the common carotid at least fifty times. Dr. Smyth, of New Orleans, ligated the innominate artery, and the patient lived for two years afterwards, and performed his duty as a sailor.

COMPOUND COMMINUTED FRACTURE.

Here is a very distressing case, sent here by Dr. Sell, from Greensburg, Pa. This boy, with three others, was coasting on last Christmas day, this boy occupying the front of the sled, and while descending the hill collided with a post, sustaining a compound comminuted fracture of the left thigh. The surgeons at Greensburg removed a piece of bone 1½ inch long. When admitted to the hospital, the wound in the thigh was discharging pus quite freely, and he also had four very foul ulcers about the left ankle, and a bedsore over the lumbo-sacral articulation.

The bones now are not in apposition, the result of which is an extensive burrowing of pus along the muscles of the thigh. He will soon lose his life from septicæmia or pyæmia if nothing is done for him.

I intend to make a counter-opening on the posterior surface of the limb, thus securing the so-called through and through drainage, and thus prevent it from collecting in the wound as it is doing now. I think this will be more important than wiring the bones together, which I will also do. I first enlarge the wound on the outer side of the thigh, and you can now see the upper fragment denuded of its periosteum.

I have now removed three pieces of bone, each one about 3 inches in length. I saw off about 2 inches of the upper fragment, and also the end of the lower one. I now make the opening through the posterior surface of the limb, so as to secure thorough drainage. I now drill a hole in each fragment, and wire them together.

The wire will not do much good except keeping the bones from separating widely. I close the wound with wire sutures. By measuring I find that the limb is now 3¾ inches shorter than the other. I will now apply a straight splint, made out of binder's board, extending the whole length of the limb, leaving an opening in it at the place of the wound.

January 31, 1891.

Gentlemen: The first patient I will show you to-

day is the case I operated on one week ago for an aneurism of the brachial artery. It has not been dressed since the operation. I purposely postponed the dressing of it, so as to show you how well we have succeeded in our antisepsis, and also that you may observe every step in the progress of the case. You remember the aneurism was larger than an orange, that the artery was ligated on the proximal side with chromatized catgut and the ligature cut short, and that the wound was sewed up with continuous sutures. There is now no pulsation where the aneurism had been. Twenty-eight hours after the operation the pulse could be felt in the radial artery. This rapid establishment of the collateral circulation was due, no doubt, to the fact that it had somewhat taken place prior to the operation, on account of the presence of the tumor.

After the operation he was put to bed, the arm wrapped in cotton, and bottles of hot water applied. This was done to prevent any tendency to gangrene which might have occurred. You see there is no pus, and the wound has healed nicely. There has been no elevation of temperature at any time since the operation.

The artery was ligated probably between the superior and inferior profundæ arteries. This has certainly been a very instructive case to you. We will allow this boy to use his arm a little now.

(*To be Continued.*)

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY DR. H. GRADLE.

LECTURE III.

The knowledge that a given disease is of parasitic origin is but a part of its etiological study. We must complete our information by learning the mode of dissemination and transfer of the parasite, and by examining all condition and factors, which bear on the possibility of infection. Let us, in the first place, trace the distribution of microbes from the infected patient to others.

The simplest problems we will meet in the case of venereal diseases. Gonorrhœa and genital chancres are always the result of direct contact with other infected individuals. But chancres on other parts of the body have often been transferred through media, such as pipes, tools held in the mouth, unclean surgical instruments or tatooing needles. The syphilitic virus can evidently retain its vitality for hours, or possibly a few days while clinging to objects outside of the body. The possibility of the mediate transfer of virus should always be in the mind of the physician, because it is a danger that can be controlled. Through the teaching of Lister, surgeons have become fully aware of the responsibility of having the fingers, the instruments and the skin of the patient to be operated upon clean in the bacteriological sense. But mediate transfer is also a very important danger in some diseases, other than those seen by the surgeon. In diphtheria, for instance, the bacilli exist in the fluids of the mouth and according to Roux and Yersin,[1] may persist there for a fortnight after the recovery of the patient. What chances are thus offered for the conveyance of the germs on the surface of spoons, handkerchiefs and toys! How often, too, are cases encountered in practice, where the contagion of scarlet fever can be traced with almost absolute certainty to infected clothes, books of circulating libraries or even letters.

The dissemination of virus in the form of atmospheric dust can occur directly, whenever the skin scales, as it does after scarlet fever and measles, provided the virus exists in the epidermis. But from moist surfaces the air cannot take up any solid particles. However, in diseases of the respiratory passages as coryza, bronchitis, and particularly in pulmonary tuberculosis the virus is cast off in quantity in the sputum. Wherever this dries, be it on a handkerchief or on the floor, it forms a crust, which any mechanical force can crumble. As soon as it is broken up finely enough, currents of air can now take up the infectious dust and disseminate it. The researches of Cornet have shown that these occurrences explain the spread of phthisis. Shortly after the discovery of the bacillus of tuberculosis a bitter, and we might add, a most unwise discussion pervaded medical literature, as to whether consumption is contagious. It seemed to be overlooked, by both sides, that a disease may be parasitic in origin and still not be directly transferable through the commingling of the sick with the healthy. An illustrating example is trichinosis. Here the proofs of the infection by trichinæ are so evident, that they cannot be ignored. Yet no one considers trichinosis contagious from man to man. The consumptive *patient*, too, is not a source of contagion directly, but his *sputum* may be such, if not properly disposed of. Cornet found that in rooms where consumptives spat on the floor or into cloths, dust could be collected from the walls and furniture which produced tuberculosis in animals, while in well-kept hospital wards, where spittoons were used and cleaned, no germs of consumption could be detected. As tuberculosis is always localized at first in that part of the system where it enters, there can be no doubt that pulmonary phthisis is produced by the inhalation of the bacilli suspended in the air. There is thus a chance for the acquisition of consumption wherever patients have lived without taking care of their sputum, which means nearly everywhere.

The physical conditions for the dissemination of the virus are the same in all other instances where infectious discharges can in any way dry, as in all parasitic diseases of the respiratory passages, in influenza and in the case of the micrococci of pus. Perhaps, however, there are not many microbes which can remain alive after dessication as long as the tubercle bacilli.

As far as we can judge from chemical evidences the plasmodium of malaria is likewise suspended in the air in the districts which it inhabits. This microorganism, it seems, is not transported by winds to any distance from its natural home.

Dust, however, does not remain suspended in the air indefinitely. The air purifies itself by the deposition of the floating matter. According to researches by Hesse and others we must regard the bacteria floating in the air as colonies on the surface of motes rather than as isolated cells, and objects of such size will settle all the sooner. Indeed, under ordinary circumstances there are but very few germs in each liter of air. The possibility of air infection diminishes hence rapidly as we recede from the source of the infectious dust. But, on the other hand, deposited

[1] Annales Pasteur, July, 1890.

dust may be carried on the surface of clothes and other objects to any distance.

Intestinal discharges contain the virus in typhoid fever, cholera and probably all infectious bowel diseases. These microbes, as well as those contained in sputum or purulent discharges thrown on the ground, ultimately reach the soil which we must next consider as a medium in the dissemination of germs. Of course, we include in this study not merely the natural ground, but also all organic refuse dumped on the soil.

Even before the days of bacteriological knowledge it had been recognized that the virus of some diseases can only be transmitted from patient to patient, and it was therefore called *endogenic* virus. In other cases, however, an *ectogenic* virus was supposed to be capable of multiplying in the soil or at least outside of the animal body. Bacteriological studies have confirmed this distinction. The parasites of leprosy, and tuberculosis, and as far as we can now judge the unknown virus of syphilis and the exanthematous fevers can only grow in the animal system, or if at all in artificial dead media, only under conditions attainable in the laboratory and not occurring in nature. In the cases of such microbes of strictly parasitic habits, the soil plays no rôle in their dissemination. But the microbes of diphtheria, of erysipelas, of suppuration, of typhoid fever and of cholera, as well as some other diseases are not limited to a parasitic existence. They can be made to grow readily in nutritive soil, outside of the body. These bacteria can hence vegetate, under conditions actually realized in nature, and may thus lurk wherever organic refuse can furnish them the necessary food, ready to invade again the more congenial soil of the living body. While it is questionable, whether these *facultative parasites* can continue their existence outside of the body indefinitely on account of the competion with putrefactive bacteria, even their temporary abode in the soil or drinking water, is a menace to public health. There are, however, other microorganisms, which live entirely in the soil and only occasionally find entrance into the animal system. Amongst them are the bacilli of tetanus and of malignant œdema, the proteus bacillus, which has been found in human bodies, the plasmodium malariæ and probably also the bacillus of anthrax. In the etiology of the diseases caused by these occasional parasites, the soil is the medium of paramount interest.

Bacteriological analysis has shown that the soil of the earth teems with bacterial life in its upper strata, the number and variety of microbes being somewhat in proportion to the amount of organic refuse which has accumulated. As we enter deeper down, the micrococci soon disappear and only the spore-bearing bacilli persist, until at a depth varying from three to six feet, exceptionally up to twelve feet, all bacterial life ceases. The immense majority of the microbes of the soil are not pathogenic, but are distinctly useful in preparing the ground chemically for the vegetation of higher plants. But the bacilli of tetanus and of malignant œdema have been found in nearly all samples of earth tested, and occasionally the staplylococci and some less well known but not indifferent bacteria have also been met with. Our present knowledge thus warrants us in considering the soil everywhere the ultimate home of the virus of tetanus, and of malignant œdema, a very rare disease in man, as well as of the miasm of malaria in certain localities. It is presumably also the permanent abode of the cholera bacilli in some parts of India and of the anthrax bacilli in some infected fields, and it may be the temporary medium in which the parasites of maladies, like cholera, typhoid fever, the various surgical infections, perhaps diphtheria, and possibly some other "filth diseases" can lurk for a greater or shorter time, whenever they have been introduced by accident.

The manner of infection from the soil has been well elucidated in the case of anthrax by the researches of Koch.[2] An animal dead from this disease spreads the virus on the ground by means of the discharges and bloody exudations. The further dissemination can be stopped by deep burial of the cadaver, for in the absence of oxygen, and in the low temperature at the level of the frost-line, the bacteria remaining in the body will soon die. But some contamination of the surface soil is unavoidable if the cadaver has fallen and remained there for even a short period. Pasteur has suggested that earth-worms may also bring to the surface virus from the buried carcass, and has indeed shown the possibility of this occurrence. But as the buried bacilli do not survive long, their dissemination in the bodies of earthworms is probably minimal. The bacilli on the surface, however, continue to grow in the soil moistened by the discharges, and if the temperature is not below 15° C., spores will form in the course of one day. Anthrax spores are so resistant to all influences that there is probably no factor active in the soil capable of destroying them, except, possibly, sunshine on the surface. Hence, a meadow once infected remains so forever. But the anthrax bacilli can also grow in infusions of leaves and refuse such as do occur in stagnant pools, and hence, under favorable conditions of temperature and moisture, the dangerous microörganisms can spread enormously. Inundations are known to favor their dissemination. As a matter of experience, the most dangerous fields are those possessing a calcareous soil, which observation agrees with our knowledge that the parasites thrive best in a neutral or alkaline medium. As the susceptible animals, cattle and sheep, take their food from the surface of the ground, there is thus sufficient opportunity for the ingestion of spores, which, after germinating in the intestines, ultimately enter the system.

Direct infection of wounds may also occur. This is perhaps an exceptional mode of entrance for the anthrax parasite in the natural infection of animals, but it is the usual way in which tetanus is contracted by animals and man.

The most direct relation of the soil to human health is through the medium of drinking-water. All water coming from the earth below the bacteria-bearing strata is sterile, as shown in the most conclusive way by Fraenkel. The soil is a filter which retains all bacteria if the water percolates a sufficient distance. Hence driven and deep tubular wells are free from all contamination. But ordinary dug wells, or any wells drawing from a stratum of water near the surface, may become contaminated by direct introduction of refuse, or by leakage from cesspools through crevices or through imperfectly filtering strata of coarse gravel. Open bodies of water are, of course, still more exposed to all sorts of contamina-

[2] Mittheilungen aus dem kaiserlichen Gesundheitsamte. Bd. I, 1881

tion. Much labor has been spent on the problem whether pathogenic bacteria, especially those of typhoid fever and cholera, can grow in drinking-water. At any rate, it has been shown that a multiplication of the bacteria is possible if the water contains enough organic residue. This amount, of course, varies with the purity of the water. On the other hand, pathogenic bacteria are easily crowded out by the better adapted, harmless water bacteria. As these vary in number and kind in different samples, no absolute rule can be stated applicable to all water, as to whether infectious material can multiply in it. There is no doubt, however, that the different parasites which can enter the human body through the intestinal canal can at least remain alive in drinking-water for a variable length of time. It has even been claimed by Lortet[3] that different pathogenic bacteria can sink to the bottom, and there continue their existence. He states that he has detected them in the mud 150 feet below the surface of Lake Leman (Switzerland).

There are on record many instances in which cholera, typhoid fever and various intestinal diseases have been traced with great probability to the use of infected water. But absolute certainty can only be obtained by the demonstration of the corresponding bacteria in the water. It has been claimed by many observers that they have detected the typhoid bacillus in suspected wells. However, as this microbe is very difficult of identification, the earlier observations are not convincing, but the more recent positive statements by Finkelnburg and by Uffelman seem reliable.

There are no reasons known at present for attributing to drinking-water any infections except those starting in the intestinal canal.

It is at present an open question whether drinking-water is the only medium through which the soil influences human health. Pettenkofer and various of his disciples have shown that the mortality of typhoid fever rises as the level of the water in the surface soil sinks, and *vice versa*. This was first found to be true in Munich, and then confirmed by the records of several other large cities. The relation, however, does not hold good in all places, and we have as yet no satisfactory explanation of the proportionality of these two events.

All sanitary experience expressed, particularly in the statistics of many European cities, has warranted the conclusion that at least all intestinal diseases, but also to a less extent, other acute infections, are reduced in number by the purification of the soil by efficient drainage, and increased by the accumulation of organic refuse and filth.

A medium often accused of disseminating disease germs is sewer gas. The only evidence on this subject, however, is the accidental observation of diseases in houses with defective plumbing. This evidence may be suggestive, but is in no way conclusive. Special experiments, as well as physical knowledge, teach that the air or gases cannot tear away microbes from fluids in which they are suspended. It is true, the germs of decomposing refuse, sulphuretted hydrogen and ammonia are poisonous, but whether they could do damage when diluted to the extent that they actually are, is not known. Moreover, their influence could not cause specific infection.

[3] Transactions of the Tenth International Medical Congress, Section of Hygiene, p. 142.

The multiplication of all ectogenic virus varies with the atmospheric conditions, especially the temperature. Hence, we see a preponderance of intestinal diseases in warm weather. The parasites which have accidentally reached articles of food, thrive best in the heat of summer. The proof of this view is furnished by the successful limitation of summer diarrhœas of infants by sterilizing the milk. On the other hand sunshine is one of the most potent factors in nature in the suppression of bacterial life. But how far its influence extends in reality, is not known. The preponderance of other infections, like the exanthematous fevers, and especially the diseases of the respiratory organs during the colder season can probably be referred to the habits of man. Overcrowding, insufficient ventilation, less frequent change and washing of clothes, can explain the dissemination of some forms of virus in winter.

Besides the distribution of virus in the outer world, etiology must take into account the transient life of parasites on the surfaces of the body. The mucous surfaces, especially, may be more than a temporary abode, they may be a place for growth and reënforcement of pathogenic bacteria, just outside the threshold of the tissues. On the skin Bordone-Uffreduzzi has found regularly some seven kinds of bacteria, none of them identified, however, as pathogenic. According to Welch, the staphylococcus pyogenes albus lives habitually in the deep layers of the epidermus. How persistently stray germs can cling to the skin was too often shown in former days by the shadow of puerperal fever following for weeks in the wake of some unfortunate obstetrician.

On the surface of the healthy conjunctiva, Fick found bacterial life eighteen times in fifty examinations, while wherever any catarrhal secretion occurred, different forms of microbes, including pyogenic cocci and bacilli were invariably detected. In the secretion of the nose different bacteria of pyogenic properties have been found by various observers. It is in the mouth, however, where the greatest variety of bacterial life is encountered,[4] for here parasites find the buccal fluids as well as remnants of food as soil, with the most suitable temperature. Between twenty and thirty different varieties have been found by different observers in the mouth and on the teeth, and their number seemed largest wherever the cleanliness of the mouth was neglected. Many of these parasites have pathogenic properties. Amongst them are the well known pus cocci and in about one-half of all the people the pneumococcos or diplococcus of pneumonia in a state of high virulence.

In the normal stomach bacterial life is destroyed during that period of digestion when the amount of hydrochloric acid reaches about 1.5 parts per thousand. But the secretion of acid is easily deranged, and even if normal, those bacteria which are protected by coarse particles of food not sufficiently chewed may escape its influence.

The intestines harbor normally, at least four or five varieties of bacteria as regular contents, while occasionally many other species may lead there a short existence. Of the normal intestinal parasites the bacterium coli commune processes moderate pathogenic properties according to A. Fraenkel's, and especially Welch's researches. It must be regarded as

[4] See important researches by W. Miller, "Die Microörganismen der Mundhöhle," 1889, and Dental Cosmos, September, October and November, 1891.

one of the possible causes of peritonitis, while Welch's observations point it out also as the source of secondary infections complicating other parasitic diseases. The bacillus lactis ærogenes, normally in the intestines, is also not devoid of pathogenic properties, as well as several less well known parasites found there by bacteriologists.

In the healthy male urethra numerous parasites have been detected, amongst them the yellow staphylococcus.

The importance of bacterial parasites on mucous surfaces is nowhere greater than in the case of the vagina during parturition. The numerous observers who have investigated this region bacteriologically do not all agree. Some claim to have found no microbes in the healthy genital canal, but the preponderance of evidence is that they do exist, at least in many women, and that amongst them there may be virulent staphylococci. It is evident that in such instances puerperal infection can occur, nothwithstanding perfect sterility of the obstetrician's fingers, if the vagina itself has not been sterilized.

The existence of virulent parasites on the surfaces of the body does not necessarily lead to their invasion of the tissues. In the case of the skin, the protection is evidently of a mechanical nature. The bacteria cannot penetrate the superficial epithelial cells. But they can be forced into the glands by friction, and thence infect, as Garré found on his own person on rubbing into the skin the yellow staphylococcus. This possibility explains the cutaneous origin of furuncles in parts subjected to friction. Slight abrasions, moreover, do away with the protection by the epithelium.

Intact mucous surfaces likewise offer a barrier to the invasion of *some* bacterial species. Hence, in the healthy mouth the various parasites found there do not penetrate into the tissues. We can often observe flooding of the conjunctiva with virulent pus from an inflamed tear-sac without morbid consequences. But if, under these conditions, the surface of the cornea is wounded, infection is sure to result. The bacterium coli commune remains in the intestines at all times, but if the mucous surface is injured or ulcerated (perhaps from a different infection), the parasite can invade the living tissues. Traumatism is hence a most important factor in the occurrence of infections. There are, however, other bacteria which require no accidental aid in order to enter the mucous membrane. Thus the gonococci, the virus of syphilis, of trachoma, and presumably of all infectious forms of conjunctivitis, can penetrate at once after they have been deposited on a congenial mucous surface. Judging from inhalation experiments on animals, it seems that tubercle bacilli can also invade the lungs whenever they reach the pulmonary surface. Yet, Koch has pointed out how even tubercular infection can be facilitated by previous desquamation of pulmonary epithelium, for instance, during the course of measles. Besides those instances where certain parasites can invade the mucous membranes, in which they remain localized at least originally, there are other cases in which these surfaces offer no barrier whatsoever to microbes, which soon become generalized throughout the system. Thus, the bacillus anthraxis can penetrate either the lungs or the intestinal surface in susceptible animals, and we must attribute this faculty also to those parasites which will invariably attack every susceptible human individual exposed to contagion — for instance, the virus of the exanthematous fevers.

The penetration of pathogenic bacteria through any of the surfaces of the body results in disease whenever the organism cannot resist the parasites successfully from the start. In natural or acquired immunity the introduction of living bacteria of the species against which the system is protected is harmless, and progressive invasion does not occur. But whenever the immunity is not absolute, the possibility of infection can be increased by any circumstances which favor the bacterial attack or lessen the defense of the organism. The resistance of the living body varies with the organ or tissue attacked by the parasites. Hence, certain forms of virus can enter the body only through certain gates. The tubercle bacillus, for instance, does not readily gain a foothold in superficial wounds. Some bacteria — the tetanus bacillus, the pus cocci, as well as many organic poisons, like toxalbumins and the albuminoids of snake venom—can pass through the healthy digestive tract without danger. The pneumococcus, the direct cause of pulmonary inflammation, was injected by the brothers Klemperer under the skin of their arms without more result than a trifling local irritation.

The occurrence of infection depends, furthermore, on the number of parasites introduced. When the resistance of the organism is altogether inefficient, as in virulent anthrax of guinea-pigs, or in septicæmia of mice, a single bacterium suffices to produce fatal infection.[5]

But in case of active defense on the part of the body, the effect of inoculation depends on the number of parasites. Thus, up to 10,000 chicken-cholera bacteria are tolerated by a guinea-pig without harm; 10,000 and upwards produce an abscess, but 300,000 kill speedily by septicæmia before an abscess has time to form. In Ogston's experiments, staphylococci of pus were innocuous in minimal numbers, produced inflammatory nodules in large quantity, in still greater number, abscesses, and ultimately, pyæmia. These results explain themselves, when we remember that the tissues tend to destroy the parasites, while the latter irritate or kill the tissues by means of the poisons they generate. The more of the specific poison there is introduced with the living parasites, the better can the latter overcome the resistance of the tissues. In conformity with this view, it has been observed that the partial immunity against anthrax does not protect the animal against infection with an overwhelming number of bacilli. Infection with staphylococci is not invariably successful in animals as little susceptible as rabbits and dogs, but can be accomplished with greater certainty if the specific poisons or sterilized cultures of the same cocci are added to the living parasites. Indeed, we must regard the variable virulence of pathogenic bacteria as dependent, at least in part, upon the amount of the specific poison with which they are laden. Hence, accidental inoculation at autopsies with fluids of progressive phlegmons is more serious, on account of the heavy "charging" of the microbes with their poison, than the introduction of the same cocci cultivated artificially under circumstances less favorable to their virulence.

[5] The researches on which these statements are based are detailed in an important paper by Watson Cheyne, in the British Medical Journal, July 31, 1886.

An important factor in the occurrence of some infections is traumatism. Not only can mechanical violence open the gates, so to speak, for the parasites, where intact surfaces would bar them out, but it can lessen as well the resistance of the tissues. All surgical experience teaches that bruised wounds are more readily infected than clean cuts. Slight traumatisms are of influence, also, in the localization of virus circulating in the blood. Tuberculosis of bones and joints is often preceded by slight contusions, which would have caused only a transient disturbance had the tubercle bacilli not been in the system. Similar observations were made by Schueller in experiments upon animals. By trifling injuries to joints, and intravenous injection of tubercular material, he obtained articular tuberculosis. In a comparable manner, the staphylococcus aureus, which, when injected into the veins, does not ordinarily infect the marrow of bones, can cause osteomyelitis if a bone be fractured.

SOCIETY PROCEEDINGS.

The Medical Society of the Missouri Valley.

Tri-Session of the Fourth Year held at Leavenworth, Kansas, March 17–18, 1892.

FIRST DAY—EVENING SESSION.

The Society met in Chickering Hall, and was called to order by the Secretary, Dr. F. S. Thomas, of Council Bluffs, Iowa, in the absence of the President, at 8 P.M.

The Society was organized at Council Bluffs, September, 1888, with seventy-seven members. Drs. Donald Macrae, of Council Bluffs, Jos. M. Emmert, of Atlantic, Iowa, J. M. Richmond, of St. Joseph, Missouri, and A. S. von Mansfelde, Ashland, Nebraska, have been presidents. The Society now has a membership of 350 of the best physicians in the great Missouri Valley. The success of its meeting and its wonderful growth is largely due to the untiring energy of the Secretary, Dr. F. S. Thomas, who has few equals in that capacity in any medical society.

The first paper was read by Dr. J. F. Binnie, of Kansas City, Mo., entitled

REPORT OF A CASE OF MICROCEPHALUS; OPERATION; DEATH; REMARKS.

Wm. M., æt 20 months, was sent to me on November 5, 1891, by Dr. George Miller, St. Marys, Kansas, and admitted into All Saints' Hospital. Dr. Miller noticed the posterior fontanelles closed at *two* months and the anterior at *four* months, and that the child began to act strangely when seven months of age. He was unable to hold anything in his hands, or to support himself in any way. He rolled his head and eyes, protruded his tongue all the time, and let the saliva dribble away. The whole expression was idiotic. The mother told me that the child at one time could say various baby words such as boy, dog, mamma, and papa.

Condition on Admission.—The child is in a condition such as Dr. Miller described. He seems to recognize his friends to some extent, and puts out his arms toward them. The hair is unusually long. The occipital region is very prominent and hyperæsthetic. Both frontal and parietal regions are much flattened, especially on the left side.

The mouth remains open, the tongue is partially protruded and saliva constantly dribbles out. The eyes roll, but are not specially prominent.

Diagnosis: Microcephalus obstructing brain development and causing retrograde changes in the speech and motor regions.

Advised Operation.—The head was now shaved, cleansed and covered with bichloride gauze. November 6, 1891. Chloroform having been administered, craniotomy was performed, Drs. Griffith, Morrow and Thrush assisting.

After the usual thorough cleansing of the head, a longitudinal incision was made on the left side parallel to, and about one-half of an inch from, the sagittal suture. This incision began at the anterior margin of the hairy scalp and was three and one-half inches in length.

Anteriorly at an angle of about 60° to the longitudinal cut, an incision $1\frac{5}{8}$ inches in length, was made outwards and backwards. Posteriorly at an angle of about 100° to the longitudinal cut, still another incision was made running outward and slightly backward for $1\frac{3}{8}$ inches.

Along these incisions the soft parts were reflected and the bone laid bare. Beginning anteriorly it was sought to cut out a strip of bone by a chisel and mallet. After using the chisel for a short time the respiration and pulse became so bad that the child had to be inverted. It appeared to me that this condition was probably brought about by the concussions arising from the method used, therefore, when the child was sufficiently recovered for the operation to be proceeded with, I finished the first cut through the skull corresponding to the longitudinal incision with a Hey's saw, and made another parallel and three-eighths of an inch external to it. The strip of bone between these cuts was removed by means of elevators and forceps. Corresponding to the anterior and posterior lateral incisions through the soft parts, strips of bone were removed with the rongeur forceps. In the frontal region the skull was about one-fourth of an inch thick and very hard. Posteriorly the bone was about one-eighth of an inch thick and not so hard. The dura was not opened. The parts were cleaned with warm water, the wounds sutured with catgut, catgut drains put in anteriorly and posteriorly, and dressings of iodoform and bichloride gauze applied.

After the operation the condition of the patient was extremely poor, pulse very weak, and lips colorless. Patient was wrapped in hot blankets and kept with the head low; whiskey and digitalis were used to combat shock. In spite of all that could be done the child died thirteen hours after the operation was finished. Ten hours after death the head was examined. Wound looked healthy. On removing the calvarium the dura was found to be very firmly adherent to the bone. The sutures were very firmly ossified. Dura was unusually thick and firm. The brain was soft and pale. Vessels of the pia mater well filled. Cerebellum very large. From the Rolandic fissure forward the brain was proportionately smaller than behind. The left side was smaller and flatter than the right anteriorly.

Base of brain appeared normal. The ventricles were empty, their walls somewhat hard. All the gray matter was unusually pale and gelatinous looking, evidently œdematous, but was of normal extent. When laid on the table the brain collapsed to some extent of its own weight, it was so soft.

My excuse for offering a report of a single case of craniotomy is that the operation is one that has rarely been performed, and that every case published may teach us some valuable lessons.

In this operation the chisel and mallet were used with the greatest possible caution, and yet seemed to be the cause of grave symptoms necessitating a prolonged pause. The loss of blood was small and could not, I think, play any practical part in the production of the shock. The same may be said of the anæsthesia, which was at first chloroform, but afterwards ether.

Dr. Lanphear,[1] of Kansas City, has published some notes of a case in which he performed craniotomy; the patient died from shock, and from the account Dr. Lanphear gives of it, I am inclined to believe that the chisel and mallet had very much to do with the production of this fatal shock.

Tuholske[2] has had an experience with the chisel and mallet similar to mine and has practically come to the same conclusions as I have been forced to, viz.: that however appropriate the chisel and mallet may be for opening the adult skull, in children even when the sutures are firmly ossified, they should not be used.

How, then, should we operate? There are, of course, several suitable ways in which we may open the skull. 1. If we wish to make a clean cut we may use either Hey's or MacEwen's saws; or 2, if we think a clean cut offers no advantages we may use a small trephine with which to make the initial opening, and from the trephine hole "snip" out as

much bone as is necessary with rongeur, or Keen's[3] modification of Hoffman's forceps. To me the latter method seems the better as it can be carried out much more rapidly than the former, and bleeding from the cancellous tissue is less apt to annoy us after a punching than after a sawing of the bone.

What is this condition of which we have been speaking — this microcephalus or microcephalia? Ziegler[4] considers that it is an arrest, or rather failure, of development, an *agenesis*, due either to intrinsic causes or to injurious influences exerted on the embryo. It is, accordingly, very commonly found in association with other morbid alterations in the brain and other organs, and is partly a consequence and partly a concomitant of these. "Porencephalia (ventricular hydrocephalus), meningeal inflammation and premature synostosis must occasionally be regarded not as mere concomitants of the defective cerebral development, but as the primary changes which have led to it."

Victor Horsley,[5] in an article on this subject, quotes Lannelongue's views with approval. These views are that Virchow is wrong in considering microcephalus to be due to premature ossification of the cranial sutures, but that the primary lesion is a mal-development of the brain, and that the bony changes are secondary. In spite of the apparent contradiction, Lannelongue thought that "although the primary defect may not be in the cranial bones, yet there is abundant evidence to show that the brain, in cases of microcephalus, is exposed to increased pressure, and therefore he conjectured that a relief of this pressure might act beneficially by allowing the stunted brain to develop with greater rapidity."[5]

In the case I have just reported the child, at one time, had a certain amount of intelligence; could say certain childish words; the fontanelles closed, and *post hoc* there was loss of speech and intelligence.

In a second case which has come under my observation the fontanelles were closed at birth, and the child has shown no mental development.

In six cases only have I been successful in finding particulars as to when the fontanelles closed, and the relation to this (in time) of the mental development or non-development.

In three cases, viz., McClintock's,[6] Keen's first[7] and my own first case, there had been a certain amount of development, which, when the fontanelles closed, was lost.

In Horsley's second case[5] the fontanelles were closed at birth, the child developed slightly mentally until near the end of the first year, but this progress was soon lost.

In three cases, viz., Keen's second[8] and third and my own second case, the fontanelles were found closed at birth, and there never was any mental development noticed.

Careful comparison of these cases forces one to the conclusion that cases of microcephalus must be divided into two groups, *congenital* and *acquired*. In the former, the condition is most probably one of agenesis, the synostosis being a mere concomitant of, or secondary to the cerebral defect. In this class of cases, logically, not much is to be hoped for from operative interference unless, perchance, as Starr has somewhat vaguely said, the increased space given the brain by the operation stimulates its growth and development.

In *acquired* microcephalus operative interference is highly logical. Here the brain has shown itself capable of development until the bones, for some reason or reasons, unite, and perhaps, as in my case, thicken, and not only prevent further development, but cause retrograde changes to take place, so that all the mental powers previously gained are now lost, and the child, from being more or less intelligent, becomes a drivelling idiot.

In a considerable number of cases of microcephalus which have been published, and quite notably so in my own first case, there has been marked tenderness over the occiput, and the posterior parts of the brain have been of a size out of all proportion to the anterior parts. These features I cannot throw any light upon.

What is the mortality after craniotomy? The following table shows it to be about 24.5 per cent.?

	No. of Operations.	No. of Deaths.
*Lannelongue	25	1
Keen	4	2
Parkill[12]	1	0
Morrison[12]	1	0
Gerster and Sachs	1	1
McClintock[6]	1	0
Horsley	2	1
Van Lennup	2	1
Pengruchen[10]	1	1
Lanphear	1	1
Maunoury[11]	1	1
Trimble[13]	1	0
Anger[11]	1	0
Heurtaux[11]	1	1
†Hartley and Starr[11]	1	0
Wyethe[9]	4	2
Binnie	1	1
Total	49	13

This mortality of 26.5 per cent. is high, but does it render the operation unjustifiable? I think not. While it is too early to pass judgment on the ultimate results, yet so far the gain obtained in many of the cases is exceedingly encouraging, and when we consider the utter hopelessness of any other known method of treatment, we are justified in running grave risks in our endeavors to raise these unhappy children from a state of hopeless idiocy.

CONCLUSIONS.

1. There are two forms of microcephalus—(a) congenital, and (b) acquired.

2. Craniotomy, while indicated in acquired microcephalus, will most probably be useless in congenital.

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* Some of these operations of Lannelongue's were performed for epilepsy, but most of them were for microcephalus.

† Trephining—opening being very large.

Dr. P. D. St. John, of Wichita, Kansas, read a paper entitled

ECTOPIC PREGNANCY WITH REPORT OF A CASE.

The patient, Mrs. E., 31 years of age, of German parentage but American born, has three children aged nine, four and two years. I was present at the birth of the last child, two years ago the ninth of last December. Her labors were all normal and easy. She had enjoyed good health, being regular in her habits, which were attended with very little pain.

On the first of October last I was called to see her, found her suffering pain in the pelvic region as of uterine colic or threatened miscarriage.

She stated that she had been flowing for two weeks, slightly but continuously. On examination I found the uterus pushed down low in the pelvis, tender and fixed, lying somewhat to the right with very little dilatation of the os. Her temperature was $102\frac{1}{2}^{\circ}$; pulse 110. Anodynes and antipyretics were given with viburnum.

I was called back October 3. Again I examined and gave it as my opinion that there would be a miscarriage and my treatment was directed to that end. However, the woman protested and was positive that she was not pregnant, although she admitted that she had been irregular as to her menstruation.

Her husband reported to me a few days later that his wife's condition had greatly improved. He, being a travelling man, started on the road for his house.

During the night of October 14 I was called again. By this time I was getting somewhat uneasy and puzzled in regard to the case. However, before examination, I obtained some additional history which gave me more light. The timidity of the patient had heretofore prevented her speaking freely. She now told me that she last menstruated regularly July 26, yet she was still positive that she was not pregnant, insisting that she did not feel as she had felt in former pregnancies. She said further that about September 23, while carrying a bucket of water she was taken with a severe pain in the left ovarian region as though something had torn loose.

This, I now think, was the time the pregnancy changed from tubal or ovarian to abdominal. At this date, October 14, eleven weeks had passed since the time of cessation of regular menstruation.

I found the woman suffering severely, with a temperature of $103\frac{1}{2}^{\circ}$, and pulse 114. Vaginal examination disclosed the same condition as ten days previously, only there was greater tenderness and greater rigidity of the organs.

Abdominal palpation showed a tumor in the left ovarian region which I could very distinctly outline as that of a fœtal body.

Fluctuation was distinct and by conjoined palpation of the ovum ballottement could be produced. I had examined it this way two weeks before, but did not detect this. The mists were now cleared from my mental vision and I was sure this was a case of extra-uterine pregnancy, the first case I had ever seen, but I was afraid this intelligence had come to me too late to save my patient. I blamed myself for being so slow in making the diagnosis.

While these symptoms are not so common in this form as in tubal pregnancy, yet the metrorrhagia, the intercurrent attacks of pain, the languor, the fainting, and the rapid pulse ought to have been sufficient aid and warning to have led me to a correct diagnosis sooner. But as this was my first case and my patient is well, I am sure your criticism on this point will be lenient.

The morning of the 15th I called to see the patient, and found temperature $103\frac{3}{4}^{\circ}$; pulse 104. The 16th they were about the same. The husband came in on the morning of the 17th by my request, and I asked for consultation.

Dr. Fabrique was called, who confirmed the diagnosis of abdominal pregnancy. I had advised the use of electricity, which advice was concurred in by the consultant.

We used the McIntosh dry cell battery, the negative bulb electrode passed well up in the left cul-de-sac of the vagina, and the large moist electrode on the skin immediately over the tumor, beginning with an occasionally interrupted galvanic current of forty milliampéres.

The electricity was applied each day, night and morning, after the first day, the 17th. The current was gradually increased up to 100 milliampéres. The length of each sitting was ten minutes, and the number of sittings, fourteen, extending over eight days.

Having had no experience in such a case, I watched very closely each day the effect of the applications of the electricity current; could detect no change other than a gradual reduction of temperature and pulse till after the fourth day.

After the thirteenth or fourteenth application there was clear and positive evidence of suspended growth, such as an almost normal temperature and pulse.

The tumor was decreasing in size, less tender on pressure, and quite movable. I saw the patient again October 31. Her temperature and pulse were normal. The tumor was disappearing, and the patient able to sit up a little.

Dec. 1, I called again, the lady doing the work of the household. I could still feel a little lump where the tumor had been. I saw her again last Monday (March 14). She has regained her usual weight, enjoys as good health as she ever did, is regular as to her menstruation, and does all her own work.

OÖPHORECTOMY—CASES AND RESULTS.

Dr. J. H. Van Eman, of Kansas City, Missouri, read a paper on this subject.

At a recent meeting of the Eastern Gynecological Society a report of cases of laparotomy for the purpose of removing diseased ovaries and tubes was read. In this paper and at various times and in various medical journals of still more recent date, Dr. Ward, of Topeka, Kansas, lays claim to pioneer work in this line of surgery in the State of Kansas.

In all of the articles above referred to the claim is substantially made that for the purpose above mentioned but one laparotomy had been made in the State of Kansas prior to 1890.

To put on record past work in this line and to give the results, other than immediate recovery from the operation, is the object of this paper. Part of the cases mentioned in this paper have been more or less fully reported.

Case 1.—Mrs. R., aet. 36, first menstruated at eleven, and in her fright bathed herself in cold water. Result, arrest of menses, and great suffering during her periods ever afterward. Married at 20. Sterile. General and sexual health getting worse and worse from year to year. About 1874 began having during the menstrual period a strange trembling feeling in lower part of abdomen, followed soon by a rhythmic contraction of both psoas and iliacus internus muscles, flexing the thigh on the abdomen. For the first eighteen months this only occurred during her periods; later on, however, an action of the bowels, or trying to sweep the floor, would bring on an attack. If used in the very beginning, these nervous attacks could be controlled by a full dose of belladonna by the rectum. An attack when fully developed could only be controlled by full chloroform anæsthesia. Once, as an experiment, nothing was done and the attack lasted thirteen hours. Chronic uterine catarrh also existed continually.

After having exhausted all methods of treatment of which I had any knowledge, and with a full understanding on the part of the patient as to possible result, I, on the fifth day of February, 1880, removed both ovaries, but did not touch the tubes. The patient made a good recovery. Convalescence was prolonged by the twisted ends of the silver abdominal sutures breaking off during a hard vomiting spell soon after the operation. The wire was lost in the abdominal wall and later caused an abscess. One end came to the surface and was then easily removed, the abscess promptly healing. Neither the menses nor the "Jerks," as the patient called her attacks, ever appeared again. She is now living in Iowa, has become quite fleshy; does her own work and compared with her past is in good health. This so far as I have any knowledge, was the third oöphorectomy made west of the Mississippi river and the first one that recovered from the operation.

Case 2.—Miss——, of Wichita, Kansas, æt. about 22. Dysmenorrhœa since the age of fifteen. Has been compelled to abandon school, music and all steady employment of any kind, as she is confined to her bed and room fully two weeks out of every four, and is only fairly on her feet again before she is once more prortrated. At her menstrual period just previous to the operation, her physician informed me he used $3\frac{1}{2}$ grains of morphine hypodermically in one night and scarcely seemed to moderate the pain. Removed both ovaries Dec. 18, 1884. She vomited everything for the first five days. Outside of this she did nicely. Two years after the operation she reported that her enjoyment of life began after the operation. She was looking remarkably well. The only thing that mars the completeness of her recovery is a disturbance of vision making steady use of the eyes painful. This, I believe, is caused by the long delay in operating. Had the operation been performed at a much earlier day her eyes would have been saved. Menstruation had not reappeared at the end of two years.

Case 3.—Mrs. O., æt about 30, of Marion, Kansas, married, two children, had a lacerated cervix which was operated upon by some one. Union only partial. Her pain and marked nervous disturbance during menstruation became worse rather than better. On the 13th day of October, 1886, I removed both tubes and ovaries. She had an uneventful convalescence, and I am told by a medical gentleman who recently saw her that she has fully regained her health. Her improvement, however, was very slow.

Case 4.—Mrs. H., of Marion Co., Kansas, æt. about 31, married, no children, says she has had a continuous flow for twelve years, quite profuse at her periods. Has a fleshy mass protruding from the cervix; this has been removed with the serrated spoon three times at least. It reappears again in a few months. Bimanual examination showed that the uterus rises almost to the umbilicus and to its left is a movable tumor the size of an orange. Operated October 18, 1886. Uterus evenly enlarged. No adhesions, right ovary healthy, left had degenerated into a single cyst the size of a large hen's egg. Removed both ovaries and tubes. Convalescence from operation rapid and uninterrupted. Flow still contin-

ued and became very offensive. About three months later after many severe expulsion pains a mass looking like dead flesh and smelling very badly was expelled, and the flow soon ceased. Six months after the operation she wrote me that she was as well as she ever was in her life and was able to do her own work. I have quite recently heard that her health continues good.

Case 5.—Mrs. R., æt 34, of Lebanon, Kansas, married 12 years, never pregnant. Has an enlargement of the abdomen of several years standing. Examination showed a central tumor reaching as high as the umbilicus and evidently the uterus itself, and in size that of a five months pregnancy. The cervical portion, while somewhat enlarged, was neither shortened nor softened. Menses had been regular but not profuse. Tumor gave pain and uneasiness by its size and pressure. An operation was advised for the purpose of arresting the growth of what was diagnosed as an *intramural fibroid*. Operation made September 1, 1888. No adhesions nor difficulty in getting at the growth. It was necessary, however, to enlarge the external wound in order to reach the ovaries, and it was found necessary to lift the uterus entirely out of the abdominal cavity, the enlargement being almost entirely at the expense of the superior portion of the uterus, i.e., above the ovarian ligaments, the ovaries being found far down on the side of the uterus. The uterus when brought out showed such a striking resemblance to one containing a five month's fœtus, that it was difficult to believe such was not the case. Owing to the conditions the uterus could have been removed with ease. As this contingency had not been anticipated, the operation agreed upon was carried out and both ovaries and tubes were removed. Vomiting was quite severe in this case and the first five days following the operation were pretty stormy, largely owing, in my judgment, to a failure to thoroughly clear out the alimentary canal previous to the operation. After free purgation there was no further trouble. One year later the patient returned for examination and advice. The menses had not reappeared. Her health was fair, excepting neurotic troubles in the shape of hot flashes and a general nervous condition such as women have at the climacteric period. The abdominal wall, thin in a very spare woman at the beginning, was now quite thin with a tendency to flatulent distension, which led her to fear that the tumor was getting larger. Bimanual examination showed the uterus very firm in consistency, low down in the pelvis, and of the size of a small goose egg. Thorough dilatation of the uterine canal, a somewhat difficult thing to do, showed the uterus empty, and the enlargement had been largely at the expense of the anterior superior wall.

Case 6.—Mrs. S., æt. 26, married eight years; one child, born a year after marriage; no other pregnancy. Health wretched since birth of child; nervous in every sense of the word; pains in uterus, back, ovarian region and down inside of thighs. Appetite, digestion and strength far below normal. Cervical leucorrhœa and dysuria, all symptoms aggravated during menstrual period. Bimanual examination showed a dilated, patulous os, with slight cervical laceration. Uterus low in the pelvis, but normal in size and not painful to touch. Ovarian tenderness on both sides; worst in left side. A diagnosis of cystic degeneration of ovaries was made, and their removal advised. Advice being accepted, the operation was made at the patient's home in Phillips county, Kansas, October 13, 1891. Operation done in the usual manner. Both ovaries a mass of cysts; the left ovary was the worst. Either from her long railroad trip to Kansas City and home again, or from the effect of the repeated examinations, the cyst occupying the whole distal end of the left ovary had been ruptured, and showed a dark, raw surface as large as a thumb-nail. Comparatively slight pressure forced out the contents of the tunica albuginea, such as a seed could be forced out of an overripe cherry. This patient's convalescence was uneventful, and when last heard from she was very cheerful and happy.

Such is a brief history of six Kansas cases upon which it has been my fortune to operate, and on account of which I claim the credit, if there be any, of doing pioneer work in that line of surgery, beginning it in 1880, twelve years since, and at a time when the methods of doing the operation were *sub judice*. A fact recalled to my mind since beginning this paper by reading over my notes of the operation made in 1880, in which I found I wrote at length my reasons for preferring the abdominal method to the vaginal one. I take pleasure, also, in adding that all of my Kansas cases recovered.

Dr. A. H. Cordier, of McPherson, Kansas, followed with a paper in which he reviewed the abdominal and pelvic surgical work of Dr. Joseph Price as he saw it in Philadelphia The speaker was very encomiastic in his remarks.

Dr. M. B. Ward, of Topeka, Kansas, in the discussion on Dr. Van Eman's paper, stated that, in the paper which he had read before the society mentioned by the essayist, he reported the facts as he knew them. He did not know that Dr. Van Eman was the first surgeon to perform oöphorectomy in Kansas; if he had known it, he should have given him credit therefor.

(To be Continued.)

Allegheny County Medical Society.

Scientific Meeting, February 16, 1892.

J. C. LANGE, M.D., PRESIDENT, IN THE CHAIR.

Dr. Kœnig read a paper entitled

A HISTORY OF A CASE OF DOUBLE PNEUMONIA ILLUSTRATIVE OF THE ABORTIVE TREATMENT.

The following case of pneumonia may perhaps be deemed worthy of recital before this society. I present it for your consideration and comment. Be the initial cause of pneumonia whatever it may, I am firmly convinced that the consolidation of the lungs is due to excessive efforts on the part of nature to repair the damage that has been done to the extraordinarily vascular lung-tissue, and to guide, or more properly, to restrain, the reparative forces, is the course that would seem to be indicated in the treatment of acute lobar pneumonia. In exemplification of this line of treatment of an acute pneumonia I submit the following history.

One week ago to-day at 8:30 o'clock in the morning I was called to see Mr. J. R., aged 37. The night previous, while conducting the calcium light arrangements in one of the theatres, he experienced acute shooting pains in his chest, but remained at work till the conclusion of the play. Shortly after arriving at his home, about one o'clock, he was attacked with a severe chill and suffered intense pain about the region of, and somewhat inferior to the left nipple. From that time till I saw him he suffered unremittingly, in spite of thorough application of mustard. His breathing was so difficult that the first glance was sufficient to locate the cause of his illness in his chest, and closer investigation revealed the following conditions: Pulse 108, temperature $102\frac{1}{2}^{\circ}$, face flushed, respiratory movements very painful and abrupt. Auscultation over the front of the chest revealed roughened respiratory murmur, but on account of the suffering of the patient the physical examination of the lungs was not very perfect. A rather profuse and extraordinarily well marked rusty expectoration, however, satisfied me as to the condition of the lungs when conjoined with the other superficial symptoms. The cough, by reason of the pain, was suppressed as much as possible. The first requisite to my mind was to relieve the pain, which was accomplished by a hypodermic injection of one-fourth grain of sulphate of morphine and one-one hundred and fiftieths of a grain of sulphate of atropine. The second indication to my mind was to divert the blood stream and reduce the heart's action. With this end in view I gave him a hypodermic tablet of hydrochlorate of apomorphine of the strength of one-tenth of a grain. This I gave dry on his tongue and it would, I hoped, nauseate him somewhat and initiate diaphoresis. I then wrote the following prescription:

℞. Tincturæ Veratri Viridis, gtt. L.
Sodii Salicylatis, ʒ iv.
Syrupi Senegæ, f ʒ iij.
Aquæ Menthæ Piperitæ q. s. ad f ʒ iij. ℳ.
Sig. A teaspoonful every 2 hours.

Being a man of vigorous health, weighing about 165 pounds, I considered two drops of the veratrum none too much, even conjoined with the ten grains of salicylate of sodium every two hours. The salicylate was added for the reason that some five or six years before I had attended the same patient through an attack of acute articular rheumatism, and thinking a similar influence might possibly be associated with his present illness it was added for both its anti-rheumatic as well as for its diaphoretic and heart sedative action.

The first dose of the prescription mentioned was given him about nine o'clock. At 3:15 P.M., he was bathed in perspiration, earning his life by the sweat of his brow, as it were; his pain was less severe, pulse 98, temperature 100°, and his cough was somewhat relieved. His expectoration was strongly tinged with a rusty color. During the time of my visit he became sick at stomach and vomited some grumous fluid, evidently the result of the apomorphine administered earlier in the day. At 10 P.M. his pulse was 88, temperature $99\frac{1}{4}$°, pain much relieved, face less flushed, but the perspiration was still profuse. I ordered the mustard to be reapplied.

Feb. 10, 10 A.M. Pulse 80, temperature $98\frac{1}{4}$°. Countenance almost normal in expression and color. Sputum somewhat less markedly tinged, cough slight, pain produced only on deep inspiration, slept well during the previous night, diaphoresis still profuse, urine highly colored and viscid. I ordered a solution of citrate of magnesium in wine-glassful doses to quench thirst and relax bowels. Thinking the severity of the attack overcome, the veratrum and salicylate were reduced to one-half the former dose.

Feb. 10, 6 P.M. Pulse 80, temperature $99\frac{1}{2}$°, face a little more flushed, cough moderate, sputum rather more deeply colored. Full dose of the veratrum again resorted to. Diaphoresis less profuse.

Feb. 11, 9:30 A.M. Pulse 72, temperature $98\frac{1}{2}$°, patient passed a comfortable night, slept considerable, cough slight, sputum still red but more faintly so, diaphoresis slight, face almost natural in color. During the past 48 hours the patient was so moist with sweat and was withal doing so well that it was thought best not to subject him to a physical examination of his chest. At this time, however, an examination was made and the base of the left lung, posteriorly, was found somewhat dull on percussion, and over an area of about the size of a hand distinct crepitant râles were heard: on the right side over a smaller area the same condition was discovered but the râles were more of a submucous variety. The fifty drops of tincture of veratrum viride and the half ounce of salicylate of sodium being exhausted, the prescription was ordered refilled and continued in slightly reduced doses. Another bottle of magnesium was also ordered.

Feb. 11, 6 P.M. At this time the patient was seen by Dr. Pettit, who found his temperature to be $100\frac{1}{8}$°, and pulse 73. The crepitant râles on both sides were also noted by him. Diaphoresis and cough slight, pain almost absent. The pulse being reduced to about normal, he lengthened the interval between the doses of medicine to three hours.

Feb. 12, 10:30 P.M. Pulse 64, temperature 98°, patient rather pale, but feels well, expectoration still colored, cough less frequent, no pain, crepitant râles more moist, though still well marked. I discontinued the veratrum and salicylate, substituting for it the following prescription:

℞ Potassii Iodidi, ʒ i.
Syrupi Pruni Virginianæ
Aquæ Fœniculi aa, f ʒ iss. ℳ.
Sig. A teaspoonful every three hours.

Feb. 12, 6 P.M. Pulse 72, temperature $98\frac{1}{4}$°. General condition excellent. Patient begins to desire food.

Feb. 13, 11:45 A.M. Pulse 60, temperature 98°, cough rather increased, but expectoration more scanty though still tinged with yellow, crepitant râles still recognizable on both sides, though more moist in character. The medication was reduced to one-half teaspoonful every four hours, and the patient was allowed to sit up part of the day.

Feb. 14, 5:30 P.M. Pulse 65, temperature $98\frac{1}{4}$°. The patient sat up all day. His appetite was good and he was without pain. His cough was almost voluntary, but at the base of the left lung slight mucous râles could still be heard. His expectoration was colorless, and his general condition, aside from the reduced pulse rate, normal.

In the absence of consolidation and bronchial breathing some may perhaps be inclined to doubt the genuineness of the pneumonia, but when we consider the powerful influence to which the patient was subjected prior to the time when those symptoms could have been developed, their absence is easily explained. The subnormal temperature and especially the subnormal pulse, after the cessation of the inflammatory process, might be considered analogous to the hypnotic, or even narcotic effect often seen after the passage of nephritic calculi where a powerful anodyne was administered, during the passage of the calculus, without, perhaps, entirely allaying the excruciating pain.

Discussion.

Dr. Rigg: I believe this is the proper treatment. It is the treatment that should be followed in pneumonia with very few exceptions. The selection, however, of the particular cardiac sedative is the choice of the practitioner. I prefer aconite, but I will leave that entirely with the individual physician. In the early stage of pneumonia stimulants have been recently recommended and recently condemned; I think they are injurious; they are contrary to the effect you want to produce. I have been following that treatment for the last thirteen years, and I have no reason to regret it, no reason to believe that any other treatment I have seen, and have at times taken part in, is any better.

Dr. Duff: I was very much impressed with this case which is certainly well worthy of remembrance. My observation teaches me to believe that salicylate of sodium is one of the best remedies of this kind. I wish to call attention to the fact that salicylate of sodium is one of the most efficacious remedies in my hands, and in the hands of several practitioners with whom I have spoken on this subject. There is a condition in pneumonia analogous to that we have in rheumatism, and the operation of the medicine is to a certain extent in the same line.

Dr. Thomas: I wish to corroborate what Dr. Duff has stated, that salicylate of sodium is possibly one of the best remedies in pneumonia. In the *Pittsburg Medical Journal* some years ago I gave the statistics of the continuance or the length of the disease, and the average limit of the disease as treated by salicylate of sodium. I look upon the disease as analogous in its character to rheumatism, and that both exist under a similar climatic condition, and that both require pretty much the one treatment. I do not remember what year my report was made, but if any of you wish to refer to it, you can get it in the journal published by Dr. Gallaher some years ago.

Dr. Daly: There can be no doubt that viewed as a great controller of the heart's action in inflammatory diseases, veratrum viride is a very useful remedy. I have used it more or less for twenty years, but it has always occurred to me that a more important point, or quite as important a point, is to know when to abate its administration. It is so potent a remedy that unless good judgment is observed in abatement of the dose, serious harm may be done with it. I have for many years been in the habit of instructing the nurse to count the pulse with the instruction that when the pulse fell to 95, with some moisture about the hands, to increase the interval of the dose and diminish its quantity to half or quarter of whatever had been given, and with instructions that if the febrile action increased to increase the dose again.

With reference to the value of salicylate of sodium in pneumonia, I think many can testify to its value, but I presume it is of value because of the common origin, frequently, of pneumonia and acute rheumatism. I think every man who has been an observer in the practice of medicine for fifteen or twenty years, or even less, will come to the conclusion that many acute pulmonary affections, such as bronchitis and pneumonia, have their origin within the system, not without the system at all, from the retention of broken down products. What we may regard as a rheumatic condition may in one case produce rheumatism and in another case pneumonia, in another case rheumatic bronchitis, or even a rheumatic pleurisy; that I have demonstrated to my own satisfaction more than once, and therefore it is reasonable that salicylate of sodium gives such results as it does. It will also reduce temperature and the heart's action, and for prompt and efficient work it is very difficult to find a remedy equal to it; but one must know when to stop the remedy.

Dr. Borland: I have used tincture of aconite with about the same results as Dr. Kœnig has had with veratrum viride. Salicylate of sodium, in my experience, has been satisfactory in many cases, but it is hard upon the stomach, and for this reason I have not been able to give full doses. What is called salicylate of sodium, that preparation that is made use of in filling prescriptions, is a preparation I understand made from coal tar products, or in other words, there is no true salicylate of sodium about it. Salicylic acid, which is made use of, is a synthetical product. I am in the habit of ordering the true salicylic acid and combining it with ordinary bicarbonate of sodium. I find that this combination is much more easily borne, and has better effects.

Dr. Davis: I would like to state that I have never been able in private practice to give salicylate of sodium longer than twenty-four or thirty-six hours. In hospital patients, where we can control them, we can prosecute the adminis-

tration longer, but I do not know a patient who can resist and will not resist after forty-eight hours. It is so repulsive that the taste is a factor in starting a rebellion both in the stomach and palate of the patient.

Dr. Duff: Mr. Davis' remarks are certainly a revelation to me. As a rule, I have never experienced any trouble. I have had patients taking large doses, very large doses, of it for a week at a time without any bad results.

Dr. Batten: I have been in the habit of prescribing salicylate of sodium in rheumatism, and I have often continued it for two weeks, and I have never found any bad results from the taking of it, or any effect on the stomach, nor found that my patient objected to taking it. I have thought that salicylate of sodium was pleasant to take.

Dr. Koenig, in closing the discussion, said: I desire to recall the attention of the society to a statement that I made, which has, judging from the discussion, apparently been overlooked; it is, namely: That the antiphlogistic action was initiated by apomorphine, one of the most powerful depressants and emetics in the entire pharmacopœia, and it probably had much to do with the abrupt termination of the pneumonia. I want also to express my appreciation of the danger that is associated with the administration of large doses of heart sedatives; for that reason I made three visits to this patient in one day. No doubt what Dr. Rigg and Dr. Borland stated, that many other remedies will accomplish the same result, is true. There are many roads that lead to Rome, though some may be more direct or otherwise preferable than others. Aconite or tartar emetic will accomplish the same result; but if I were to give aconite in sufficient amount to accomplish what the veratrum viride and salicylate of sodium did, I would want to sit at the bedside of the patient. I have no doubt it is an excellent remedy, more rapid in its action, and perhaps even more certain, but unless closely watched, we unnecessarily risk the life of the patient. In veratrum viride there are two or more alkaloids, one of which is powerfully heart sedative, while another is emetic, but less markedly so than the heart sedative one; before, however, the sedation can go to a fatal limit the emetic action is established and the stomach emptied of its remaining contents.

Dr. Roger Williams read the paper announced for the evening on

POST-PARTUM HÆMORRHAGE.

I merely desire to call your attention to a few notes on the subject of post-partum hæmorrhage, with a view of presenting a subject of interest to all engaged in the healing art, and calling to mind the conditions that eventuate in the great hæmorrhages following delivery. There is no time when action is more promptly required and knowledge and wisdom brought into play, than when, alone, one is brought into the presence of a post-partum hæmorrhage. It is unnecessary to present the picture, for one experience traces as with a stylus the tablets of memory more vividly and truly than ever artist's fingers wrought, and the whole play is necessarily so briefly enacted that we recall each incident, as we would describe a landscape seen in the lightning's flame. There is no emergency in the physician's life that gives less time for consultation and reflection, and no time more exacting to do the right thing, at the right time, and in the right way. Post-partum hæmorrhage is one of the most frequent complications of delivery. Call to mind, if you please, the many conditions you guard against in a labor about which you have doubt, and, in a vast majority, post-partum hæmorrhage is first to be feared. There is something more than intuition that places one on guard, for in the vast majority of subjects to this complication we find indisputable indices pointing to the subject in question. The patient, by reason of our wrongly-directed civilization and her whole surroundings, has engrafted a lax habit of body, inviting uterine inertia, and as a consequence, post-partum hæmorrhage. We find illustrations of this in the upper ranks of life for they are most prone by reason of the demands of society. Education plays a part also, in inducing a premature and unhealthy development; and in support of this, I call to mind a home, almost palatial in its furnishment and surroundings, where a subject of post-partum hæmorrhage resided, and the intellectual food for thought was furnished by Boccacio and the Queen of Navarre. Comment is unnecessary, for the young ladies of that home, so surrounded at a period of life when quiet is most essential, the reading of such books is but the sowing of dragon's teeth, with the harvest in anticipation.

Among the causes contributing may be mentioned the site and size of the placental attachment. A placenta attached to the fundus may have slight uterine attachment, and the uterine sinuses closed by nature's processes. Where the placenta is thin and covers a great surface, we may have ectasis of the uterine vessels, and as a result, hæmorrhage. Local œdema, induced by perverted secretion and inflammation, may prevent contraction, and as a result, we have immediate hæmorrhage. Complication to the funis, where it is interfered with and shortened, may cause a too rapid placental displacement, and therefore profuse hæmorrhage even before the child is extruded from the maternal parts.

A few years ago I delivered Mrs. G.—a multipara—and the cord, beside being tied in a knot, was entwined around arm and neck, and during labor, the placenta was in part detached, causing a very great hæmorrhage. One peculiarity of this patient was her daily potation, which consisted of 16 ozs. of tincture of opium, which she obtained clandestinely, and managed to keep her vice secret, until her maid was invited into my office, and the liquid measured not only one time, but many.

Retained portions of placenta are a frequent cause of post-partum hæmorrhage. I call to mind a case that occurred in my practice during my residence in Philadelphia:

Mrs. S., four and one-half months in the family way, was pushed off the pavement by a swinging gate, and fell in a sitting position to the gutter. She promptly aborted, and as the placenta could not immediately be taken away, she suffered profuse hæmorrhage, which lasted until the placenta was expelled.

There may be a proliferation of the placental vessels, constituting an extra or supplementary lobe, and the retention of this, even after the placenta is removed, will cause profuse hæmorrhage. Plural births, with double placentæ, are not an unfrequent cause of post-partum hæmorrhage, for at times the uterus seems to be irresponsive to all our efforts, and a hæmorrhage beyond what we desired is the result. I call to mind a case in illustration:

Mrs. G. was delivered of twins, and the delayed second delivery was caused by an inertia induced by a beginning cancerous growth. The last delivered child was in part covered by a fleshy mass not unlike placenta, and was born dead.

Laceration of the cervix is a cause of post-partum hæmorrhage not unfrequently. At times the structures of the uterine neck are hard and brittle, as well as unyielding, and during labor are apt to suffer to a greater or less extent.

Mrs. W., a patient of mine, was delivered during my attendance at the American Medical Association at Nashville, and suffered an extensive laceration of the cervix which was the immediate cause of an extensive hæmorrhage, controlled by styptic injections and plugging.

Lacerations in the vulval canal are not unfrequently the cause of violent and prolonged hæmorrhage.

Mrs. D., a primipara, was delivered by me in December last, and there was a band of tissue broad as a common lead pencil joining the labia minora, which had escaped my examination, and when labor was completed, the torn end of this small impediment caused quite a hæmorrhage, which was with difficulty controlled by application of Monsell salt.

Growths within the uterus, even when too small to be detected during labor, are oftentimes the cause of alarming post-partum hæmorrhage. I saw a case of this character with Dr. McNeil, the history of which he has kindly furnished:

Mrs. K., a German, aged 38, confined December 16, labor lasting twenty-four hours. Antero-posterior diameter narrow; delivery with instruments, and nothing marked the labor out of the usual order, until the eleventh day, when

violent hæmorrhage occurred, keeping up until the patient was almost exsanguinous. Prompt injections of hot water with vinegar, and teaspoonful doses of ergot, relieved the hæmorrhage, and expelled a small fibroid, which was the cause of hæmorrhage. All went well until January 3, when, during one of the quick atmospheric changes, the patient had a chill, rise of temperature, and died of pneumonic congestion January 5.

As post-partum hæmorrhage is generally a preventable trouble, and where it often follows in a physician's path, rendering such an one open to censure for neglect or want of knowledge, I claim your indulgence in this paper, which may appear too long and tiresome—and yet we all have interest in a subject of such vital importance, not only to friends and family, but to ourselves, and this is my only excuse.

The character of a contraction has much to do with post-partum hæmorrhage. Admit we have a perfect contraction immediately after labor; if it is not permanent and tonic, the relaxation may induce a fearful hæmorrhage. Post-partum hæmorrhage and permanent contraction are incompatible, I will admit, yet on examination one hour after labor, and finding the uterus soft and flabby, and where coagulæ have not formed in the uterine sinuses, hæmorrhage will surely result. Nature has her own way of controlling hæmorrhage by contractility of the uterus, and by plugging of the orifices of the uterine sinuses; and to assist by art when nature fails, is not an ignoble part the physician plays in attendance upon labor.

Not long ago, a physician left the bedside of a patient with violent post-partum hæmorrhage, with hurried directions to those who could not do what he should have done, in a fruitless quest for an instrument for transfusion. Had he gone for wings, that she might rise into the circumnambient clouds, he should have been less censurable, for when he returned life and hæmorrhage each had ended.

I need not speak of the secondary causes of hæmorrhage at great length, for that man who is not awake to the importance of the uterus worn out in a prolonged and exhausting effort in expelling the fœtus, or the uterus over-distended by excessive amounts of liquor amnii, or the consequences of a multiple birth, should not practice the obstetric art. Rapid emptying of the uterus—except when filled with clots as a consequence of uterine hæmorrhage—is baneful, jeopardizing and unskilful; and to do this to the over-distended uterus is criminal. The walls of an over-distended uterus are, to all intents and purposes, as paralyzed walls, and when the shock comes from relief of distension, it is the rule to expect retardation in contraction, and as a result, hæmorrhage of a greater or less extent.

The law is individual, and not collective; and every mother is subject to the law controlling her case. True, there are principles governing, and likewise it is true we should be interpreters of the same, and should be ready at the instant to assist the tired and waning energies of the one harrassed by the prolonged and exhausting pains of labor. But how many times is it true that we have hastened labor injudiciously, and reaped as the reward some complication that should not have existed.

The over-distended uterus should be relieved on the eve of labor by careful and minute rupture of the membranes, to allow the waters to slowly drain away. I know the ground taken is dangerous, but I am supposing judicious action, and there are examples of such action that have been praiseworthy to the operator, and to the one operated upon, helpful. I beg leave to cite an illustration:

Mrs. P., enormously distended, a sufferer from ever-present pain, sleepless, and in constant dread lest she should never arrive at the day of accouchement, was advised to have the sac of waters carefully ruptured. For two days there was a constant flow, and at the end of that time she went into labor, and was delivered of twins, one weighing 9½ lbs., and the other 8½. The uterus was firmly held for an hour to guard against hæmorrhage impending, and she made a rapid convalescence. An over-distended uterus is always a dangerous uterus, and should never be left until every indication is given that no emergency arises, especially as to hæmorrhage; for the greater number of deaths resulting from hæmorrhage during the last fifteen years in the Liberty Valley have been from this cause.

I am indebted to a brother practitioner for the following:

Mrs. W., aged 23, delivered in November, 1891. Labor normal, and of six hours' duration; uterus greatly distended by amniotic fluid; secundines removed without trouble. Four hours after labor, profuse hæmorrhage set in, leaving the uterus spongy and enlarged. Contractility of the uterus weak, and as the patient could not take ergot, the hæmorrhage was kept in abeyance by injections of hot water for three hours when it returned, with alarming conditions. Clots were speedily removed and warm water injected, controlling the hæmorrhage, but the patient was exsanguinous, weak and exhausted. Digitalis and stimulants were freely used, but the patient died on the tenth day, from complication referable to the lungs. There was not at any time septic trouble.

Irregular contraction is a cause of post-partum hæmorrhage not uncommon. Part of the muscular fibres are relaxed, whilst part are in a state of contraction, the former often over the placental site, and is the cause of considerable hæmorrhage. By palpation this condition is easily discerned.

Hour-glass contraction is also a cause of post-partum hæmorrhage; rare, it is true, yet nevertheless occurring. This condition follows often the obstetrician who, by efforts of traction, excites uterine contraction at the seat of irritation—often the placental attachment, and many times the internal os, and, as a cause, we have a diaphragm temporarily placed, with placenta in part or wholly included within the uterus, and hæmorrhage of a greater or less extent resulting. This condition rarely, if ever, follows after efforts of placental expression, and as this form of delivery of the after-birth grows into favor, hour-glass contraction grows less.

Encystment of the placenta is one of the rare complications of labor, and when it occurs, the placental site remains more or less paralyzed, whilst the remaining muscular fibres are in contractility. This form of trouble in the delivery of the after-birth is apt to be mistaken for adherent placenta, and oftentimes a part of it is left intra-uterine, as a result of wrongly directed effort, and hæmorrhage occurs, complicated at times by sepsis.

The placenta and membranes, and also the decidua, may be the seat of calcareous or fibroid degeneration, or the decidua may be abnormally thick. When an accident of this character to a part of the placenta or its membranes occurs, we have a cause of irritation not unlike a foreign body placed against the maternal tissues, and as a consequence, loosening of attachment in part, or an inflammation that causes adherent placenta. I think the many cases of adherent after-birth can be traced to one of the conditions mentioned; but, be this as it may, the hæmorrhage in this complication is not to be lightly considered, for the placental site is in a state of irritation, and its muscular fibres will respond freely.

Concealed hæmorrhage, following delivery, is a subject of interest to all. That fatal hæmorrhage of this character exists, many here will attest, and the obstetrician should ever be on guard. The flabby uterus rendered insensible, and worn out by long continued labor, may, by bleeding within itself, rob its subject of life. The external evidences of hæmorrhages may be normal, but where there is evidence of hæmorrhage, the practiced eye detects at once. The conditions leading up to this are referable to clots, and at times membranes acting as a valve within the internal os.

(*To be Continued.*)

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SATURDAY, APRIL 2, 1892.

A TRIUMPH FOR CONSERVATIVE GYNECOLOGY.

An apparent victory has recently been won in favor of conservatism in gynecic laparotomy. A trial lasting six weeks has just been concluded in one of our eastern cities, suit having been brought by an alleged woman's hospital against the local newspaper which "showed the thing up." The jury brought in a verdict for the defendant and the judge refused the plaintiff a new trial. This termination was a surprise, for the jury was out a long time, and a disagreement was rendered highly probable by reason of the protracted trial and antagonistic expert medical testimony. The local medical talent, almost without exception, was ranged against the conductors of the hospital, but the latter were enabled to import progressive surgical witnesses from other cities in sufficient force to make an ordinary lay-jury waver and disagree. This very importation of foreign experts may have been injurious to the prosecution, for they seemed to assume an air of superiority towards the "conservative" local witnesses, men well known and standing well in their own city. But probably the most injurious element in the testimony against the hospital—considered in the light of the feelings of the jury—was the sworn fact that an undertaker was in possession of a death certificate and was standing by the bedside of a patient, while she was yet alive, waiting with more or less patience for the dying woman to breathe her last. There was evidence also that little bottles of colored glycerine and water were sold for medicine at ten cents a bottle. These and some similar "bad breaks," we suspect did more to hurt the cause of the plaintiffs than whole volumes of cautiously phrased medical testimony by the most eminent "conservatives."

Since the close of the trial, a letter of congratulation, written by a gynecologist of national repute, was received by the editors of the prosecuted newspaper, adverting to their "glorious and far reaching triumph." The letter further says that "not the least of the many important and vital issues growing out of this celebrated case will be the encouragement and aid thereby given to conservative gynecologists in their efforts to stamp out the moral plague of laparotomania, and to render human spaying as a fine art unprofitable as well as unpopular."

We have our doubts, however, whether it is wise or expedient for members of the profession to seem to assent to be publicly designated as conservatives, and radicals or liberals, in surgery, no matter what may be its branch or specialty. This was done at the trial in question—witnesses permitted themselves to be badged under one or other antagonizing names; and seems to us only a little worse than for a regularly trained physician to submit to be styled "an allopath"—a nickname that is neither descriptive nor true. These pseudonyms are misleading to the public. An interviewer who waited upon Dr. A. J. C. Skene, the well-known teacher and author in this field, reports him as saying that the trial was one of unusual importance, and that the issue "has been one of the most notable in the history of medicine in this country. It has been most interesting because most elaborate and also upon a branch of the science not frequently in litigation. The majority of all cases upon which expert testimony is called are fractures and other injuries from accident. So a great deal of light was thrown upon a new field of jurisprudence in this trial. The verdict is of value to medical men right along this line. It is an object lesson for the over rash who are treading along the narrow edge of the law and it also points out the way more clearly for the too conservative. For it is as grave an error to delay an operation too long when it is necessary as to operate too early and too freely. Now these two classes upon both extremes of the profession know better how to interpret the laws, and it has shown how the law looks upon our work."

The magnitude and expensive nature of this trial may be inferred from a partial list of the statistics printed in the *Philadelphia Ledger*: "The trial consumed twenty-nine working days. The transcript of proceedings includes 5,000 type written pages, containing about 1,100,000 words, perhaps as much copy as there is in Shakespeare's plays. It has taken a force of three stenographers and as many type writers the whole six weeks to pile up this record, and they will receive between $2,500 and $3,000 for the transcript of it. The reports of the proceedings, in small, closely packed type, fill 120 pages of a large square scrap book, and it would probably take a man three days to read them through. There were 258 witnesses called, many of them being on the stand twice. But it is not only or chiefly in the mass of evidence submitted that this case is notable in the history of libel litigation in this country. The point which makes the trial unique is that the charges decided upon as

libellous were 69,000 words long, longer than an ordinary novel. An alleged libel of that dimension is unheard of in legal history. The jury was out for thirty-seven hours."

EXAGGERATIONS REGARDING TRICHINOSIS.

DR. CARL FRÆNKEL, the eminent author and bacteriologist, has discussed in the *Deutsche Medicinische Wochenschrift*, December 17, the alleged dangers of American hams in the causation of trichinosis. In his opinion, there has been an unwarrantable amount of dread aroused in that direction. This corresponds with and confirms the view expressed some months ago that some of the trichinæ, found by German experts in American hams, were a variety of political trichinæ. And it might have been added they were there "for revenue only." PRINCE BISMARCK did much to ruin the reputation of our worm-infested exports. DR. FRÆNKEL, however, in part repairs the damage. He alludes to an epidemic, described by SOCKE of Bremen, where trichinosis was produced in a dozen persons, in consequence of eating American smoked ham: all of these persons recovered. In another outbreak, at Düsseldorf, in 1881, sixteen persons suffered from the disease, and three died. His statistics appear to show that a larger number of cases is produced by foreign than by European ham, but he nevertheless declares his belief that the danger of eating trichinous meat has been much overstated. Rabbits were fed with infested ham without result. RECKLINGHAUSEN also reported in VIRCHOW's *Archiv* some feeding experiments with hams and bacon from America, and found the trichinæ dead. In the same journal, KŒHNE stated that the feeding of rabbits and guinea-pigs with American ham has in no case produced positive results, but that a similar line of experiments with the German bacon induced trichinosis in the experimental animal. Other experiments of a negative character, as to the American product, are referred to. The author finds an explanation of these facts in the destruction of the parasite by a temperature of 60° to 70° F., and that the great danger is in eating the raw meat, such as the German people buy in the home markets. The trichinous American hams and bacon are less dangerous, for the processes of salting and smoking are likely to have killed many if not all of the trichinæ.

The *Boston Medical and Surgical Journal* recently referred to a case where trichinosis occurred on shipboard, said to have been due to American pork. There was a serious error in this case, too, it would appear so far as the source of the infecting meat was concerned. A bark from Bremen was reported to have had an outbreak of trichinosis at Iquiqui, Chili, from the consumption of barreled pork from the United States; and the inference was drawn by the German press that the policy of interdicting American pork was justified by the occurrence. The truth of the matter seems to be that the inculpated article was a fresh mess of pork, probably of Chilian production, and bought in the market at Iquique. The meat had not been pickled and some of it was eaten raw by the crew. Seventeen men partook of the article and all of them had trichinous symptoms. The incident simply reaffirms the position of FRÆNKEL that the true danger is not so much from American pork as it is from hog's flesh that has not been thoroughly cooked.

THE CRUELTY OF FASHION IN "DOCKING."

No true lover of the faithful horse encourages the "docking" of that animal's tail. No genuine admirer of the graces of the horse will find that his beauty is enhanced. Long tails were the fashion a generation ago, and the longer and more flowing the appendage was, the greater was the admiration for it; but an Anglo-mania has reversed the style. This country has received some good specimens of horse-flesh from England, but that is no reason why the adoption of "docking" should be imported also. It should be remembered that the climate and insect life of England differ from our own. The superabundance of flies and mosquitoes here makes the mutilation a positive barbarity, and the farther south we go, the more cruel appears the practice. The *Lancet*, some years ago, led a crusade against the "bearing-rein," which was joined in by many medical journals and hundreds of physicians, and much good was done, and much unnecessary suffering was prevented. We would be glad to see the *chivalrous* attention of the profession given to the subject of "docking" and the sufferings of our voiceless equine servants. A writer in *The Independent* says that if an owner mutilates his horse's tail, "or buys them after they have been docked—which comes to the same thing—we would not so strongly condemn him, if his intention and custom were to keep the animal as long as he lived. But to dock a horse, in the heyday of his youth, thus depriving him of his tail forever, to keep only until he is old or broken down, and then to sell him for what he will bring, is the very refinement of cruelty." Let the voice of the sincere lover of the horse be heard far and near!

TREATMENT OF SMALL-POX IN WEST AFRICA.

MR. HELI CHATELAIN, at present a consular officer of the United States in Portuguese West Africa, has been something of an explorer and philologist for that benighted region. He has also contributed to the American journals occasional observations regarding the diseases of Angola and its "hinterland." In one of his letters he describes the aboriginal management of variola. "One day I came upon two little children sitting on a mat in front of a hut; they were covered with pustules and smeared with

some dirty-looking stuff. Their mother, by their side, was driving the flies off the poor little patients; it was a pitiful sight. Farther on I noticed other cases in various stages of the terrible scourge, the small-pox. When the pustules heal up, each one leaves its white mark, lasting a month or more, so that the convalescent looks very strange, with his body dotted all over with white spots. The natives of this district follow this plan of treatment: When the pustules are formed, they are opened with the sharp point of a strong grass-stalk; then the body is rubbed with water in which bruised tobacco leaves have been boiled; after which a layer of ashes, mixed with pounded kafoto leaves, is smeared over the body. When suppuration is over, the patient is smeared with a mixture of castor oil and ground lukula wood. The latter is red, and gives the painted patient a ghastly appearance."

SEXUAL PERVERSION.

This subject, naturally revolting, has been neglected by the profession, to a very great degree, but the increase in the number of crimes, directly traceable to its influence, which the public press is called upon to record, makes some attention to it almost imperative.

The Mitchell-Ward affair in Memphis has brought this matter in a most forcible light before the public. The suicide of Dr. Breedlove, whose perverted love for another man was unrequited, has also attracted much attention. Such cases of sexual perversion can be quite readily explained, and the laity can understand them, although it is difficult to show them that such cases are not necessarily the results of evil habits, voluntarily entered into, and willfully pursued.

If to these the famous case of "Jack the Ripper" be added, and a single category made to contain them, the generalization is too sweeping for the mind, unfamiliar with these matters, and untrained in their consideration, to, at once, grasp.

In the current number of the *Medical Mirror*, Dr. G. Frank Lydston reviews this subject. Among the instances which he mentions to show the unnatural means necessary to bring into play the sexual functions of certain individuals, is one of a man who carries with him a live chicken when he goes upon his semi-occasional debauches. This chicken is decapitated in the presence of the woman, and then and only then is he capable of performing his sexual functions.

Such an individual is clearly defective, mentally, functionally, if not anatomically. Fortunately in the particular phase of his perversion, no criminal element enters to obscure the judgment. In the case of Jack the Ripper, however, the awful crime of murder being present almost forces a harsh judgment and obscures the idea of an uncontrollable, perverted sexual feeling, as the impulse leading to the killing.

Lydston's classification of sexual perversion is as follows:

I Congenital and perhaps hereditary sexual perversion.	*a.* Sexual perversion without defect of structure of sexual organs. *b.* Sexual perversion with defect of general structure *e.g.*, hermaphroditism. *c.* Sexual perversion with obvious defect of cerebral development, *e.g.*, idiocy.
II Acquired Sexual Perversion.	*a.* Sexual perversion from pregnancy, the menopause, ovarian disease, hysteria, etc. *b.* Sexual perversion from acquired cerebral disease, with or without recognized insanity. *c.* Sexual perversion (?) from vice. *d.* Sexual perversion from overstimulation of the nerves of sexual sensibility, and the receptive sexual centers, incidental to sexual excesses, and masturbation.

The majority of sexual perverts should be regarded with pity rather than disgust; be treated as patients, rather than as outcasts and criminals. In concluding Lydston says: "The practical deduction of all that has been said, is that something of the physiology of the sexual functions should be taught to young persons, at least sufficient to enable them to keep off the rocks and shoals of perverted practices. If no other argument will suffice some good may be done by impressing them with the fact that any abnormal—or for that matter, normal impression—made upon the sexual function before the period of adult life has been reached, is liable to leave a permanent impression upon the sensitive nervous organization, as a consequence of which the normal receptivity and excitability of the sexual centers and nerves of sexual sensibility may be absolutely destroyed."

INTERNAL ANTISEPSIS.

It is generally admitted, that no matter how desirable, it is practically impossible to render the organism aseptic by means of internal antiseptics, or to make it, in this way, an unsuitable field for the growth of microörganisms. An observation by M. Albert Robin, supporting this view, was recently communicated to the Paris Académie de Médicine. A syphilitic woman about forty years of age, had been treated with corrosive sublimate for some time, until apparently thoroughly saturated with this substance. She developed broncho-pneumonia and died, and at the autopsy, staphylococci, streptococci, and other microbes were found in abundance, and growing readily, notwithstanding the mercurialization. This report unfortunately is very indefinite, and can not be criticised intelligently. Robin's standing, however, is a warrant that the observations were properly made. A French physician recently prescribed an aconite granule to a young girl suffering from neuralgia. A quarter of an hour after taking the pill she was dead. At the trial it was shown that the medicine had been prepared according to the directions given in the official "Codex," and Brouardel testified

that the physician had followed his authorities and that the mistake lay in the Codex. Nevertheless, the medical man was condemned to pay a fine of 100 francs.

MEDICAL TREATMENT OF RECTAL CANCER.

Nearly a year ago DUJARDIN-BEAUMETZ called attention to a plan of handling this disorder which, in his hands, had given results at least favorably comparable to surgical results.

He regards cancer of the rectum as ordinarily of slow growth, and its dangers to be partly the result of the intestinal obstruction which it produces, partly a poisoning from the absorption of the broken down tissue of the tumor, and lastly, the mechanical results of its pressure on the ureters. To limit the action of these factors, intestinal antisepsis is at least partially available. By irrigation of the bowel, the region of the tumor is kept clean, as well as the sacculated portion of the bowel above it. Stercoræmia from retained fæces is less liable to occur. For purposes of irrigation, BEAUMETZ uses a solution of naphthol, about 4 grs. to the quart. Of intestinal antisepsis to be given by way of the mouth, he prefers salol and bismuth. To still further affect this object, laxatives are employed for the purpose of moving the bowels at least once a day. By the use of a diet of milk, eggs, fruit, starches and vegetables, the amount of material put into the intestinal canal, and capable of undergoing putrefaction and forming poisons, is much diminished.

Under the above plan of treatment, he has found that the offensive discharge from the bowels has ceased, and the patients have gained in weight and strength.

RAILROAD RATES TO THE DETROIT MEETING.

On account of the wide expanse of the territory of our Nation, the attendance at the annual meetings of the American Medical Association is almost wholly dependent upon the passenger rates given by the Railway Traffic Associations. We are just informed by the Permanent Secretary of the American Medical Association that the Central Traffic Association has agreed to make the rate to the Detroit meeting of one fare and a third for the round trip, tickets to be sold June 6 and 7 going, and return on date stamped on back by special agent at Detroit, but not good for return after June 13. Those who purchase tickets must take a certificate from the agent at the time of purchase. This is stamped by special agent at Detroit to purchase return ticket, the Permanent Secretary being held responsible for any such tickets found in scalpers' hands.

We have to say to the railroad people that they unjustly discriminate in their passenger rates against the American Medical Association. This is, we believe, with one exception, the largest delegate body, that is a National organization, in this country. Every annual meeting necessitates the carrying to and from the meetings of more than three thousand passengers. If single fare for round trip tickets were sold, the number of delegates would be greatly increased. For there are not less than seventy thousand practitioners of regular medicine, who are entitled to a representation of seven thousand delegates, besides the permanent members. With a fare of one cent per mile going and returning, the attendance would be easily doubled. This is a reasonable rate for so large a number. This is an excursion rate that is frequently made, and we never heard that it was a loss to the railroads. The profession in the principal centres should, so far as possible, count up their probable number willing and able to go at this reduced rate, and secure the coöperation of a passenger agent to obtain for them the lowest rate of excursion tickets. On such a reduction many a delegate or member will feel that he can afford to take his wife or daughter, or both.

The managers of some of the railroads will be found to be very liberal, and inclined to meet all the reasonable requirements of the profession along their lines. Others are just as illiberal, and should be shunned as plague spots in our body politic.

The attempt on the part of the Central Traffic Association to hold our Permanent Secretary responsible for the individual acts of three thousand or more people, we can only characterize as infamous and contemptible. A citation before the inter-State Commerce Commission may yet be necessary in order to obtain just treatment of the American Medical Association at its annual meetings.

A railroad does not entirely belong to its stockholders, but by virtue of its charter or franchise, it is a common carrier, and owes certain obligations to the State granting the franchise, and to the people its citizens, and we rather think our citizen physicians have some rights in a claim to equal treatment with theatrical troupes, ball players and political conventions.

A GOOD RUSSIAN PHYSICIAN.—*Le Progrès Medical* reports the case of a large-hearted Russian practitioner, residing in the famine stricken district. Visiting the sick of his locality, the doctor found that in many instances the sickness was largely caused by hunger. For the most needy he wrote out prescriptions, calling for "six pounds of pure rye flour in doses of two pounds per diem." He ordered his patients to get the medicine at the drug store of the nearest village or town, where it would be obtainable for the sick free of charge to them. The worthy doctor made arrangemants with the druggists to supply the flour at his expense. In this way the sick of

his district will be kept from dying by sheer starvation.

A LEAP-YEAR BIRTHDAY.—Dr. Lewis A. Sayre was born in New Jersey, on the 29th of February, 1820. The present year saw the return of his eighteenth birthday, and yet his hair is gray. His friends aver that his heart is only eighteen years old and boyish, while his knowledge of orthopædics is such as fits well a veteran of seventy-two. A little sonnet by the rector of his church was sent him on his birthday which ends while singing,

"Eighteen, dear friend, or seventy-two,
Whiche'er it be, good luck to you."

THE following is a copy of the Bill introduced in the House of Representatives by Mr. Caldwell, entitled:

A BILL TO ESTABLISH A DEPARTMENT OF PUBLIC HEALTH.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established a Department of Public Health. There shall be appointed from civil life by the President, by and with the advice and consent of the Senate, a Medical Secretary of Public Health, who shall be intrusted with the management of the Department herein established He shall be paid an annual salary of ——. He shall, with the approval of the President, provide suitable offices for the Department, and shall employ such assistants and clerks as may be necessary.

SEC. 2. That it shall be the duty of the Department of State to obtain from consular officers at foreign ports and places all available information in regard to sanitary conditions of such ports and places, and transmit the same to the Department of Public Health; and the Secretary of Public Health shall also obtain, through all sources accessible, including State and municipal authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to the medical officers of the Marine-Hospital Service, to collectors of customs, and to State and municipal health officers and authorities, weekly abstracts of the consular sanitary reports and other pertinent information received by said Department. The said Department also shall, as far as it may be able, by means of the voluntary coöperation of State and municipal authorities, of various general and special hospitals and sanitariums, of public associations, and of private persons, procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic, endemic and other diseases, especially those of a degenerative character, such as malignant growths and affections of the circulatory, respiratory, secretory and reproductive organs, and data concerning the fruit of consanguineous marriage and transmissibility of insane, alcoholic, syphilitic, nervous and malignant types of constitution. He shall also procure information relating to climatic and other conditions affecting public health, especially in reference to the most favorable regions in the United States for the cure or relief of the chronic diseases of the several organs of the body, especially of consumption. He shall also obtain information in a sanitary point of view of the health and comfort of the laboring classes. He shall seek through the State boards of health information in regard to the healthiness and comfort in public schoolhouses. He shall, so far as he can, further collective investigations in regard to the common diseases of an inflammatory and febrile character that prevail among the people. He shall coöperate with State boards of health, the Signal Service, the medical departments of the Army, Navy, and Marine Service, and unify and utilize their work so as to make the Department of Public Health a repository of the most important sanitary facts that concern the public comfort. Besides the reports of the state of public health, which he shall report from time to time, the Secretary of Public Health shall make an annual report to Congress, with such recommendations as he may deem important to the public interests; and said report, if ordered printed by Congress, shall be done under the direction of the department. The necessary printing of the department shall be done at the Government Printing Office, upon the requisition of the Secretary of Public Health, in the same manner and subject to the same provisions as that of other public printing for the several departments of the Government.

SEC. 3. That the medical Secretary of Public Health shall frame rules, under the direction of the President, which shall serve for the instruction of consular officers of the United States and of the medical officers serving at any foreign port. In compliance with these rules every master of a vessel destined for a port of the United States shall be furnished with a certificate containing a detailed statement of the inspection of the vessel, cargo, crew, and passengers, and of the sanitary measures carried out, at the expense of the vessel; or, if such measures are not carried out, instant warning shall be transmitted to the medical Secretary of Public Health, who shall immediately notify the quarantine authorities of the port of destination.

SEC. 4. That the medical Secretary of Public Health shall make investigation, both in the United States, and, if necessary, in foreign countries, into the nature, origin and prevention of contagious and epidemic diseases, as well as the cause and conditions of particular outbreaks in disease in the United States, and shall publish and distribute documents relating to the prevention of disease.

SEC. 5. That the President is authorized, when re-

quested by the medical Secretary of Public Health and when the same can be done without prejudice to the public service, to detail officers from the several Departments of the Government for temporary duty, to act under the said Department of Public Health to carry out the provisions of this act, and such officers shall receive no additional compensation, except for actual and necessary expenses incurred in the performance of such duties. When a detail of such officers can not be made, the medical Secretary of Public Health, approved by the President, may employ such experts, and for such time and in such manner as the funds at the disposal of the department may warrant.

SEC. 6. That to defray the expenses incurred in carrying out the provisions of this act the sum of —— dollars, or so much thereof as may be necessary, is hereby appropriated, to be disbursed, with the approval of the President, under the direction of the said secretary of the department. That this act shall take effect sixty days after its passage, within which time the medical secretary of public health shall be appointed.

SEC. 7. That an act entitled "An act to prevent the introduction of contagious and infective diseases into the United States and to establish a National Board of Health," approved March 3rd, 1879, and all other acts and parts of acts conflicting with the provisions of this act, are hereby repealed.

PRELIMINARY PROGRAM OF SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Interference in Delayed Labor, Geo. C. Mosher, Kansas City, Mo.

The Influence of Parturient Lesions of the Uterus and Vagina in the Causation of Puerperal Insanity, Geo. H. Rohe, Baltimore, Md.

The Importance of Surgical Treatment for Laceration of the Cervix Uteri, Augustus P. Clarke, Cambridge, Mass.

Asepsis and Antisepsis as Applied to the Practice of Obstetrics, W. W. Potter, Buffalo, N. Y.

Non-malignant Cystic Disease of the Peritoneum, C. A. L. Reed, Cincinnati, O.

Puerperal Hysteria, a Symptom of Puerperal Insanity, W. P. Manton, Detroit, Mich.

The Impairment of the Voice, in Female Singers, due to Diseased Sexual Organs, C. Henri Leonard, Detroit, Mich.

My Operative Experience in Pus Cases. By Title, I. S. Stone, Washington, D. C.

Non-malignant Cystic Disease of the Peritoneum, J. D. W. Ross, Toronto, Can.

The Development of Obstetrics, W. S. Stewart, Philadelphia, Pa.

The Abdominal Incision, and the Treatment in Laparotomy, W. H. Wathen, Louisville, Ky.

The Operative Treatment of Ventral Hernia resulting from Abdominal Surgery, D. Tod Gilliam, Columbus, O.

My Last 100 Consecutive Completed Abdominal Sections for Diseases of Ovaries or Ovaries and Tubes, R. S. Sutton, Pittsburg, Pa.

A Case of Puerperal Mania, Llewellyn Elliot, Washington, D. C.

Porro Operation, J. H. Carstens, Detroit, Mich.

Combined Gynecological Operations, G. M. Edebohls, New York.

Hysterectomy without pedicle, S. C. Gordon, Portland, Me.

Surgical and Electrical Treatment of Ectopic Gestation, W. E. B. Davis, Rome, Ga.

Diseased Uterine Appendages as Factors in Muscular and Joint Affections, M. B. Ward, Topeka, Kansas.

Persistent Sinuses Resulting from Abdominal Section, Andrew F. Currier, New York.

Vaginal Hysterectomy for Cancer of Uterus, Complicated with Pregnancy, A. Vander Veer, Albany, N. Y.

Procidentia Uteri and its Treatment, F. A. Glasgow, St. Louis, Mo.

Peritoneal Irrigation and Drainage, A. H. Cordier, McPherson, Kan.

Broad Ligament Pregnancy, W. W. Jaggard, Chicago, Ill.

The Essential Question of Drainage in Pelvic Surgery, L. S. McMurtry, Louisville, Ky.

Electricity vs. Surgery in Gynecology; A Charge to the Jury, Reeves Jackson, Chicago, Ill.

Accidental Puncture of the Uterus in removing a Fibro-Myoma following Dilatation, Edwin Ricketts, Cincinnati, O.

A Few Considerations on Ovariotomy when Pregnancy is present; a Case, W. H. Myers, Ft. Wayne, Ind.

Uterine Displacements, Chas. P. Noble, Philadelphia, Pa.

The Treatment of Posterior Rotation of the Occiput during Labor, Edward P. Davis, Philadelphia, Pa.

A Report of Experiments Germane to the Subject of Abdominal Supporters after Laparotomy, Robt. T. Morris, New York City.

A new Axis Traction Obstetrical Forceps, Wm. B. Dewees, Salina, Kan.

Report of Cases of Albuminuria of Pregnancy Treated by Chloroform Internally, John Milton Duff, Pittsburg, Pa.

Hysterical Mania as a Complication of Gynecological Cases, Ely Van de Warker, Syracuse, New York.

Colpo-perineorrhaphy, Edward W. Jenks, Detroit, Mich.

Delivery through the Abdominal Walls, in Otherwise Impossible Births, vs. Craniotomy, Geo. I. McKelway, Philadelphia, Pa.

Microörganisms in the Diseased Endometrium and Surgical Interference, Ernest Laplace, Philadelphia, Pa.

Intestinal Obstruction following Abdominal and Pelvic Operations, W. E. Ashton, Philadelphia, Pa.

Drainage in Abdominal Surgery, Donnel Hughes, Philadelphia, Pa.

The Relation of the Duration of Gestation to Legitimate Birth, T. Ridgway Barker, Philadelphia, Pa.

SELECTIONS.

SULPHATE OF CINCHONIDINE IN THE TREATMENT OF VARIOUS TYPES OF MALARIAL POISONING.—In the *Bulletin Général de Thérapeutique* for December 30, 1891, there appears a paper upon the above subject, the author being Gemayel.

After detailing a number of cases in which he employed this alkaloid of cinchona in preference to quinine, he reaches the conclusion that cinchonidine is equal in rapidity of action and efficiency to quinine, if not superior to it, producing in all the cases to which he has given it brilliant results. He has found it particularly useful and advantageous in those fevers which have resisted quinine. Neither does he believe it to have the contraindications which often exist against the use of the older alkaloids. He orders one and a half drachms of sulphate of cinchonidine, divided into four powders, and that one of these shall be taken the first,

second, fourth, and the sixth day. On the third and fifth day the treatment is suspended. In the course of the following week the same treatment is repeated. By this means he endeavors to prevent a return of the disease, which, of course, is very important. The time which is best for the administration of the drug is just before going to bed. In this way the inconvenience of buzzing in the ears or other disagreeble symptoms, such as nausea, are escaped. However, if the attacks are severe, it is well to give the cinchonidine at other times. It is hardly necessary to add that arsenic, iron, and hydrotherapy are useful adjuncts to cinchonidine in the treatment of chronic malaria.—*Therapeutic Gazette.*

THE TREATMENT OF GONORRHŒA.—The morals of the sailors are such that every naval surgeon on active duty has a fairly rich experience in the treatment of gonorrhœa.

In the early stages of acute gonorrhœa of the anterior urethra, I have had satisfactory results from the following method of treatment: The patient is directed to close the meatus with his fingers, and then to try to pass water. As soon as the urethra is thoroughly distended, the fingers are removed, and the rush of urine thoroughly clears the canal. I then inject a solution of bichloride of mercury, 1 to 1,000, or 1 to 2,000, having it retained for a few minutes. The amount of pain caused determines the strength of solution to be used. This is repeated daily, or on alternate days, for a week. After the injection, the smarting should not continue more than an hour.

At night I use pure hot water,or medicate it with laudanum, two fluidrachms, or lead acetate, four grains to the ounce of water. If there be chordee, a very rare thing under this treatment, I direct the patient, before retiring, to immerse the penis in hot water for twenty minutes, and then administer a full dose of bromide and chloral, thirty grains of each. At the end of the week the bichloride is discontinued, and the medicated hot water used.

Should the case continue over a month, tender spots are searched for, the urethra is thoroughly dilated, and iodoform is applied to the surface, on alternate days.

If the posterior urethra be involved, ordinary injections seem useless. In the cases, after clearing the urethra, I pass a catheter behind the triangular ligament, and use weak solutions of bichloride, 1 to 4,000 or 1 to 5,000. I prefer to charge a soft catheter with iodoform and vaseline (ten grains to one ounce), pass the eye of the instrument behind the ligament, and then force out the iodoform by means of a piston. Sometimes zinc sulphate is substituted for the iodoform.

In all cases of gonorrhœa I carefully regulate the bowels, and direct the patient to drink water freely. His diet is restricted, especially as to meat, and he is obliged to spend much time in bed.

Internal medication has generally disappointed me, so that I rarely depend on it. I have never seen orchitis or cystitis follow these injections of bichloride, though such cases are reported.

The average duration of treatment is from four to six weeks. At the end of this time the patients are definitely cured. Of this I can be assured in many instances, since these patients remain under observation, when on a cruise, for months. Of course, some cases become chronic, but this is exceptional. The duration of treatment seems shorter, and the cure seems more permanent than is the case with patients treated expectantly and by internal medication.—Howard Wells, M.D., in *Therapeutic Gazette.*

ON THE ABUSE OF THE POLITZER INFLATION IN THE TREATMENT OF EAR-DISEASE.—Under this heading, Professor Buerkner, in the *Berl. Klin. Wochenshrift* of November 3, 1891, deals with the limitations of this most valuable and epoch-making measure, and reiterates the counter-indications to its use. So often has he seen harm result from its misuse, especially in lay hands, that he would restrict it to the suppurating cases and those with bilateral non-sclerotic catarrh, particularly among children. The tendency of the air to pass to the unobstructed side is dwelt upon, with its likelihood of unduly stretching the normal drum membrane, damaging the hearing and setting up a troublesome tinnitus in the ear previously normal, and this most probably when the employment has been left to lay hands, and when any gain in the diseased ear seems the more marked and encouraging by comparison with the deteriorating hearing of the other. The escape of compressed air into the stomach in some cases is also cited as an incidental disadvantage. When left in the patient's hands in the most appropriate case, the Politzer bag is almost sure to be passed on to others to whom it may prove disastrous. Buerkner has known this ready instrument to be vigorously employed for months, where inspection would have shown that the deafness was wholly due to cerumen or other trouble of the external meatus, not to speak of labyrinthine cases where it was slightly, and sclerotic ears in which it was seriously, harmful.

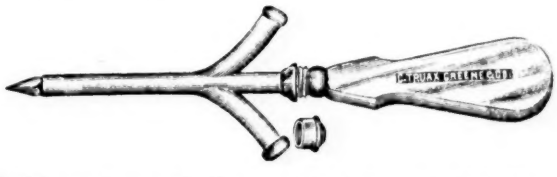
While there are certain safeguards possible in its use, and some sharing of its dangers by the preferred method of catheterization, the points, though not new, are well taken, and deserve careful consideration by all who employ the Politzer method.

NEW INSTRUMENTS.

TROCAR FOR AUTOMATIC WASHING OF THE PLEURAL CAVITY IN CASE OF EMPYEMA.

DEVISED BY DR. G. KRIEGER, LATE SURGEON AT THE UNIVERSITY OF WUERZBURG, DURING THE LAST FIVE YEARS.

Very frequently the treatment of empyema has been discussed, and although most of the leading surgeons are inclined to prefer a resection of a rib as the only radical cure to any other method it seems that quite a number of cases are curable without such a grave operation, especially in their earlier stages, by means of injections of antiseptic fluids and drainage of the pleura or by the tapping alone. However, this method was heretofore often unsuccessful, because besides the danger of admittance of air, a single injection is seldom sufficient to clean the pleural cavity perfectly and a daily repetition would be too troublesome for the patient. Both can be overcome by the underneath described apparatus.



A T-formed canula, the central tube of which bears a trocar, is armed with two rubber tubes. Each of them contains a conir valve so that an injected fluid may be allowed to pass only in one direction, that is, through the one tube to the central part of the canula, and from here down through the other tube. If the so-filled trocar is introduced into the pleura, the intra-pleural pressure will be sufficient to let out a certain quantity of pus, which will flow through the lower tube. When by the next inspiration a negative pressure is acting upon the cavity, an aspiration of any antiseptic fluid through the other tube will take place and fill the pleura until the next expiration commences. Then the aspirated fluid, together with pus, is driven again through

the lower tube, and so on continually. By this way a washing of the pleura is obtained without any manipulation except the introduction of the trocar, which, as well as the tubes, may be attached to the skin by strips of adhesive plaster. To interrupt the aspiration of the fluid, it is only necessary to attach a tube compressor to the upper tube. At the same time the lower tube, remaining open, acts as an aspirator and draws gradually sufficient fluid down as to allow the walls of the cavity to approach to each other and to diminish the volume of the cavity. In order to prevent aspiration of air the upper tube must be filled with fluid before the trocar is introduced.

When no pus is discharged any more, the canula can be removed and the wound will soon be closed. The trocar was manufactured for me by Messrs. Chas. Truax, Greene & Co., Chicago.

NECROLOGY.

DR. LEWIS HENRY STEINER, of Baltimore, died at his home in that city, on February 18, aged 65 years. He was born in Frederick, Maryland, and educated in arts at Marshall College, Mercersburg, graduating in 1846. Three years later, he was graduated in medicine at the University of Pennsylvania. His membership in the American Medical Association dates from 1852. At the time of his demise he was librarian of the Pratt Free Library, and for ten years past had given nearly all his time to literary pursuits. During the late war he served as chief inspector in the army of the Potomac for the United States Sanitary Commission. He interested himself in the establishment of schools for the benefit of the freedmen in his State, presiding for three years over the School Board of Frederick county. For twelve years he was member of his State Senate, the sole representative at times of the minority party. At different periods in the earlier years of his professional life, Dr. Steiner filled positions as lecturer or professor in the branches of chemistry and pharmacy in the Maryland College of Pharmacy, in the Columbian College, in the Maryland Institute, in the National Medical College and in the College of St. James, at Hagerstown. His address before the Medical and Chirurgical Faculty of Maryland in 1856 dealt with the relations of modern chemistry to the medical profession. In conjunction with Dr. Breed, he prepared an American edition of the Chemical Analysis of Heinrich Will. In 1861 he served as assistant editor of the *American Medical Monthly*. He was the librarian for several years of the Maryland Historical Society. In 1876, he was vice-president of the American Public Health Association, as well as public orator at the annual conventions at Philadelphia and Baltimore. In 1877, he was president of the American Academy of Medicine. He was a member of the International Medical Congress in Philadelphia. He belonged to numerous scientific and historical societies and was ever ready and helpful with his pen in their encouragement. This scholarly, fruitful and energetic life was terminated somewhat suddenly by a stroke of apoplexy.

MISCELLANY.

SIXTH STATE SANITARY CONVENTION OF PENNSYLVANIA, under the auspices of State Board of Health, at Erie, Pa., March 29, 30, and 31, 1892.

Morning Session, March 29.

1. Meeting of State Board of Health, at City Health Office, City Hall, at 8:30 A.M.
2. Sanitary Convention called to order at Mænnerchor Hall, 10 A.M. Hon. J. F. Downing, of Erie, President.
3. Prayer.
4. Music.
5. Address of Welcome, Hon. Chas. S. Clarke, Mayor of Erie, Pa.
6. Address, on Imperfections in the Law creating the State Board of Health of Pennsylvania, by Hon. J. Ross Thompson, of Erie.
7. Discussion.

Afternoon Session, March 29. Called to order at 2 P.M.

1. Prayer. Music.
2. Notes on Sanitary Condition and Necessities of Pittsburgh, Pa., by Crosby Gray, Chief Clerk Department of Public Safety, Pittsburgh, Pa.
3. Discussion on paper.
4. On Prophylaxis and Quarantine of Scarlet Fever, by E. Cranch, M.D., Erie, Pa.
5. Discussion.
6. Emergency Hospitals, by Prof. George G. Groff, M.D., Bucknell University, Lewisburg, Pa.
7. Discussion.
8. Report on Diphtheria Prevailing in Erie, Pa., during January, February, and March, 1892, and November and December, 1891, by A. A. Woods, M.D., Health Officer of Erie, Inspector Lake District.
9. Discussion.

Tuesday evening, March 29, supper at Mænnerchor Hall.

Morning Session, Wednesday, March 30, called to order at 9 A.M.

1. The Hygienic Care of Dairy Farms and Dairies, by Prof. George G. Groff, M.D., Bucknell University, Lewisburg, Pa.
2. Discussion.
3. Compulsory Domiciliary Quarantine against Diphtheia, by J. H. Montgomery, M.D., Erie, Pa.
4. Discussion.
5. Difficulties to Overcome, by S. S. Jones, Editor *Carbondale Leader*, and Secretary Board of Health, Carbondale, Pa.
6. Discussion.
7. Is Typhoid Fever a Rural Disease? by Daniel B. D. Beaver, M.D., Reading, Pa.
8. Discussion.
9. Queries by citizens present. Open to the general public. Any questions as to sanitary matters to be answered by members of State Board or Inspectors.

Afternoon Session, March 30. Called to order at 2 P.M. Prayer.

1. The Enforcement of Sanitary Laws, by Beriah E. Mossman, M.D., of Greenville, Pa.
2. Discussion.
3. Microscopic Examination of Water from Public Water Supply of Erie, Pa., with Remarks thereon, by David N. Dennis, M.D., Erie, Pa.
4. Discussion.
5. The Sanitary Utilization of Garbage and Refuse, and Destruction of Germ Life in Infected Material without Injury to the Article Treated, by J. M. Simonin, Civil Engineer, Philadelphia.
6. Discussion.
7. On the Sewer System of Erie, Pa., and the Indispensable Improvements Needed Therein, by George E. Platt, City Engineer, Erie, Pa.
8. Discussion. Music.

Evening Session, March 30. Lecture 7:30 P.M. Annual Address.

1. The Economic Value of Sanitation, by Peter H. Brice, M.D., of Toronto, member of the Provincial Board of Health of Ontario.
2. Organization of the Medical Society of Northwestern Pennsylvania.

Thursday, March 31. Inspection of Erie, Pa., by State Board of Health and District Inspectors, to leave City Hall at 8 o'clock A.M.

Morning Session, called to order at 11 A.M.

1. Paper by Wm. B. Atkinson, of Philadelphia, Inspector State Board of Health.
2. Discussion.
3. Typhoid Fever Caused by Impure Milk Supply, by L. Taylor, Medical Inspector for the Wyoming District.
4. Discussion.
5. Closing Proceedings. Answering of queries given by citizens, etc.

Adjournment at 1:30 P.M., Thursday, March 31, 1892.

THE Kansas State Medical Society meets at Fort Scott, Kas., Wednesday and Thursday, May 4th and 5th. An excellent program has been prepared.

TENNESSEE STATE MEDICAL SOCIETY.—The next meeting of the Tennessee State Medical Society will be held the 12th, 13th and 14th of April, 1892, in the Federal Court Room, U. S. Custom House, Knoxville, Tenn. The society will be called to order by the president, Dr. J. W. Penn, Humboldt, at 10 o'clock A.M., on the 12th.

The following is a list of the papers promised for this meeting:

"Science of Life"—President's Address—by J. W. Penn, M.D., Humboldt.

"Eye Affections in General Diseases," by J. L. Minor, M.D., Memphis. To open discussion—N. C. Steele, M.D., Chattanooga; A. G. Sinclair, M.D., Memphis.

"Typho-Malarial Fever" (so called), by W. B. Young, M.D., Bon Air Coal Mines. To open discussion—J. W. Carmichael, M.D., Knoxville; J. P. C. Walker, M.D., Dyersburg.

"The Corset," by Geo. R. West, M.D., Chattanooga. To open discussion—C. E. Ristine, M.D., Knoxville; Richard Douglas, M.D., Nashville.

"A Plea for Early Operative Interference in Ovarian Tumors," by J. H. Blanks, M.D., Nashville. To open discussion—A. W. Boyd, M.D., Chattanooga; Chas. M. Drake, M.D., Knoxville.

"Gall-Stones—Cholecystotomy—Removal of 52 Stones," by W. B. Rogers, M.D., Memphis. To open discussion—G. A. Baxter, M.D., Chattanooga; C. S. Briggs, M.D., Nashville.

"Epilepsy," by Michael Campbell, M.D., Knoxville. To open discussion—J. B. Cowan, M.D., Tullahoma; Thos. M. Woodson, M.D., Gallatin.

"The Use of the Curette in the Puerperal Uterus," by H. Berlin, M.D., Chattanooga. To open discussion—W. G. Bogart, M.D., Chattanooga; J. A. Witherspoon, M.D., Columbia.

"Report State Board Medical Examiners," by T. J. Happel, M.D., Sec'y and Treas., Trenton. To open discussion—J. Berrien Lindsley, M.D., Nashville; C. Deadrick, M.D., Knoxville.

"Alcohol and its Therapeutic Applications," by H. C. Brooke, M.D., Knoxville. To open discussion—W. M. Vertrees, M.D., Nashville; H. L. McReynolds, M.D., Chattanooga.

"Management of Stricture of the Deep Urethra," by W. B. Rogers, M.D., Memphis. To open discussion—Paul F. Eve, M.D., Nashville; B. P. Key, M.D., Chattanooga.

"Therapeutics, Present and Prospective," by C. W. Beaumont, M.D., Clarksville. To open discussion—G. W. Drake, M.D., Chattanooga; L. Jones Price, M.D., Knoxville.

"Glossitis," by J. L. Jones, M.D., Bell's Depot. To open discussion—W. K. Vance, M.D., Bristol; G. D. Butler, M.D., Pulaski.

"Lime Salts in Acute Dysentery," by T. H. Marable, M.D., Clarksville. To open discussion—J. A. Crook, M.D., Jackson, Geo. S. Glenn, M.D., Nashville.

"Moluscum—Fibrosum," by E. A. Cobleigh, M.D., Chattanooga. To open discussion—J. R. Buist, M.D., Nashville; J. B. F. Dice, M.D., Morristown.

"Influenza," by S. B. Fowler, M.D., Gainesboro. To open discussion—D. E. Shields, M.D., Morristown; N. T. Dulaney, M.D., Bristol.

"Some Recent Experiences with Puerperal Septicæmia, with Remarks," by W. D. Haggard, M.D., Nashville. To open discussion—J. R. Rathmell, M.D., Chattanooga; George S. Glenn, M.D., Nashville.

"Morphineism in its Relation to the Sexual Organs and the Appetite, and its Effect on the Offspring of the User," by T. J. Happel, M.D., Trenton. To open discussion—J. F. Grant, M.D., Pulaski; S. T. Hardison, M.D., Lewisburg.

"Tonics, Their Uses and Abuses," by W. F. Rochelle, M.D. To open discussion—Deering R. Roberts, M.D., Nashville; A. D. Scruggs, M.D., Knoxville.

"Impotence in the Male," by W. Frank Glenn, M.D., Nashville. To open discussion—Wm. K. Sheddan, M.D., Williamsport; J. N. Stout, M.D., Limestone.

"Imparative Conceptions in Insanity," by F. L. Sim, M.D., Memphis. To open discussion—Michael Campbell, M.D., Knoxville; Ambrose Morrison, M.D., Nashville.

——, C. Holtzclaw, M.D., Chattanooga.

"The Local Use of Phenacetine, with Report of Cases," by M. H. Lee, M.D., Knoxville. To open discussion—Landon A. Yarbrough, M.D., Covington; A. J. Swaney, M.D., Gallatin.

"A Case of Perineal Abscess in the Male," by W. F. Rochelle, M.D., Jackson. To open discussion—H. M. Anderson, M.D., Sewanee; J. F. F. Arnold, M.D., Limestone.

"Gastric Ulcer," by S. W. Sanford, M.D., Union City. To open discussion—G. M. Bazemore, M.D., Cleveland; W. C. Bilbro, M.D., Murfreesboro.

"Glaucoma," by J. A. Green, M.D., Dyersburg. To open discussion—F. T. Smith, M.D., Chattanooga; T. E. Edwards, M.D., Memphis.

"The Perineum in Labor," by Chas. P. McNabb, M.D., Knoxville. To open discussion—R. T. Bush, M.D., Gallatin; R. B. Maury, M.D., Memphis.

"Recent Progress in the Treatment of Tuberculosis," by W. C. Bailey, M.D., Knoxville. To open discussion—J. D. Plunket, M.D., Nashville; T. E. Prewitt, M.D., Grand Junction.

"Intestinal Obstruction," by J. B. Murfree, M.D., Murfreesboro. To open discussion—T. L. Maddin, M.D., Nashville; D. D. Saunders, M.D., Memphis.

"Report of Case," Duncan Eve, M.D., Nashville.

"Endometritis—Its Symptomatology and Treatment," by G. B. Gillespie, M.D., Covington. To open discussion—S. H. Toy, M.D., Johnson City; B. S. Wert, M.D., Chattanooga.

"Cholelithiasis," by B. D. Bosworth, M.D., Knoxville. To open discussion—L. M. Woodson, M.D., Gallatin; B. F. Young, M.D., Knoxville.

"Acute Articular Rheumatism," by D. H. Williams, M.D., Knoxville. To open discussion—W. T. Hope, M.D., Chattanooga; E. B. Wise, M.D., Chattanooga.

Other papers, the titles of which I have not yet learned, have been promised. Reports of interesting cases and voluntary papers will be in order. Any other information concerning the meeting that may be desired, will be given upon application to this office. Yours most truly,

D. E. NELSON, Secretary.

THE second annual meeting of the Association of Military Surgeons of the National Guard of the United States, will be held in St. Louis, Mo., April 19, 20, and 21, 1892.

The railroads have granted one and a third rates. Papers will be read and discussed by regular Army and Navy, and National Guard Medical Officers.

For any information as to meeting, etc., address, Col. E. Chancellor, 515 Olive St., St. Louis, Mo. Surg. Gen. N. Senn, W. N. G., Pres.; Lieut. and Asst. Surg. Ralph Chandler, Corresponding Secretary.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending March 26, 1892.

Medical Inspector A. A. Hochling, ordered as President Naval Examining Board.

Surgeon J. L. Neilson, ordered as member and recorder of Naval Examining Board.

Medical Inspector T. C. Walton, granted six months' extension of leave, with permission to remain abroad.

Charles Perry Bagg, of Los Angeles, Cal., commissioned an Asst. Surgeon in the Navy.

National and State Medical Societies of America.

AMERICAN MEDICAL ASSOCIATION.

Annual meeting at Detroit, Mich., June 7.

W. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa. Henry O. Marcy, M.D., Prest., Boston, Mass

AMERICAN ASSOCIATION OF ANDROLOGY AND SYPHILOLOGY.—Annual meeting at Richfield Springs, N. Y., June 20. J. A. Fonlyce, M.D., Sec., 60 Park Ave., New York City; A. T. Cabot, M.D., Prest., 3 Marlborough St., Boston, Mass.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—Annual meeting at St. Louis, Mo., September 20. William Warren Porter, M.D., Sec., Buffalo, N. Y.; Albert VanderVeer, M.D., Prest., Albany, N. Y.

AMERICAN ACADEMY OF MEDICINE.—Annual meeting at Detroit, Mich., June 4. Charles McIntire, M.D., Sec., Easton, Pa.; Phineas S. Conner, M.D., Prest., Cincinnati, O.

ASSOCIATION OF AMERICAN PHYSICIANS.—Annual meeting

at Washington, D. C., May 24. Henry Mun, M. D. Sec., 33 Elk St., Albany, N. Y.; Henry M. Lyman, M.D., Prest., 65 Randolph St., Chicago, Ill.

AMERICAN DERMATOLOGICAL ASSOCIATION.—Annual meeting at Cushing's Island, Portland Harbor, Me., September 13. George Thomas Jackson, M.D., Sec., 14 E. 31st St., New York City; E. B. Bronson, M.D., Prest., 123 West 34th St., New York City.

AMERICAN GYNECOLOGICAL SOCIETY.—Annual meeting at Brooklyn, N. Y., September 20. Henry M. Coe, M.D., Sec., 27 E. 64th St., New York, N. Y.; John Byrne, M.D., Prest., Brooklyn, N. Y.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—Annual meeting at Boston, Mass., May ——. Chas. H. Knight, M.D., Sec., 20 West 31st St., New York City; S. W. Langmaid, M.D., Prest., Boston, Mass.

AMERICAN OPHTHALMOLOGICAL SOCIETY.—Annual meeting at New London, Conn., July 20. S. B. St. John, M.D., Sec., 43 Pratt St., Hartford, Conn.; Hasket Derby, M.D., Prest., Boston, Mass.

THE AMERICAN ORTHOPEDIC ASSOCIATION.—Annual meeting at New York, September 20. John Ridlors, M.D., Sec., 337 West 57th St., New York, N. Y.; Benj. Lee, M.D., Prest., 1532 Pine St., Philadelphia, Pa.

THE MEDICO-LEGAL SOCIETY.—Annual meeting, New York. Clark Bell, Esq., Sec., New York, N. Y.; Hon. H. M. Somerville, Prest., New York, N. Y.

NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—Annual meeting at Washington, D. C. E. R. Lewis, M.D., Sec., Kansas City, Mo.; J. H. Murphy, M.D., Prest., St. Paul, Minn.

OHIO VALLEY MEDICAL SOCIETY.—Annual meeting at ——. Wm. S. Hoy, M.D., Sec., Wellston, Ohio; Ed. H. Fravel, M.D., Prest., Poca, W. Va.

STATE.

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA.—Annual meeting at Mongomery, April 12. Thomas Alexander Means, M.D., Sec., Mongomery, Ala.; Benjamin James Baldwin, Prest., Montgomery, Ala.

STATE MEDICAL SOCIETY OF ARKANSAS.—Annual meeting at Little Rock, June 2. L. P. Gibson, M.D., Sec., Little Rock, Ark.; J. S. Shibley, M.D., Prest., Paris, Ark.

CONNECTICUT MEDICAL SOCIETY.—Annual meeting at New Haven, May 24. N. E. Wordin, M.D., Sec., 174 Fairfield Ave., Bridgeport, Conn.; C. A. Lindsley, M.D., Prest., Bridgeport, Conn.

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.—Annual meeting at San Francisco, April 19. Wm. Walter Kerr, M.D., Sec., 600 Sutter St., San Francisco, Cal.; O. O. Burges, M.D., Prest., 329 Geary St., San Francisco, Cal.

COLORADO STATE MEDICAL SOCIETY.—Annual meeting at Denver, June 21. H. M. McLaughlin, M.D., Cor. Sec., Denver, Col.; Wm. M. Strickler, M.D., Prest., Colorado Springs, Col.

FLORIDA STATE MEDICAL SOCIETY.—Annual meeting at Key West, April 5. J. Harris Pierpont, M.D., Prest., Jacksonville, Fla.; J. D. Fernandiz, M.D., Sec., Jacksonville, Fla.

THE MEDICAL ASSOCIATION OF GEORGIA.—Annual meeting at Columbus, April 20. G. W. Mulligan, M.D., Prest., Washington, Ga.; Dan H. Howell, M. D., Sec., Atlanta, Ga.

ILLINOIS STATE MEDICAL SOCIETY.—Annual meeting at Vandalia, May 17. David W. Graham, M.D., Sec., 133 Clark St., Chicago, Ill.; Chas. C. Hunt, M.D., Prest., Dixon, Ill.

INDIANA STATE MEDICAL SOCIETY.—Annual meeting at Indianapolis, May 12. E. S. Elder, M.D., Sec., 44 E. Ohio St., Indianapolis, Ind.; Edward Walker, M.D., Prest., Evansville, Ind.

IOWA STATE MEDICAL SOCIETY.—Annual meeting at Des Moines, May 18. C. F. Darnall, M.D., Sec., West Union, Ia.; G. F. Jenkins, M.D., Prest., Keokuk, Ia.

STATE MEDICAL SOCIETY OF KANSAS.—Annual meeting at Fort Scott, May 3. W. S. Lindsay, M.D., Sec., Topeka, Kan.; J. E. Oldham, M.D., Prest., Wichita, Kan.

KENTUCKY STATE MEDICAL SOCIETY.—Annual meeting at Louisville, May 1. Steele Bailey, M.D., Sec., Stanford, Ky.; H. Brown, M.D., Prest., Hustonville, Ky.

THE LOUISIANA STATE MEDICAL SOCIETY.—Annual meeting at New Orleans, April 27. P. B. McCutchon, M.D., Sec., New Orleans, La.; J. B. Elliott, Prest., New Orleans, La.

MAINE MEDICAL ASSOCIATIOM.—Annual meeting at Portland, June 8. Chas. D. Smith, M.D., Sec., 126 Free St., Portland, Me.; Edwin M. Fuller, M.D., Prest., Bath, Me.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.—Annual meeting at Baltimore, April 26. Joseph T. Smith, M.D., Cor. Sec., 1010 Madison Ave., Baltimore, Md.; W. H. Welch, M.D., Prest., Johns Hopkins Hospital, Baltimore, Md.

MASSACHUSETTS MEDICAL SOCIETY.—Annual meeting at Boston, June 7. F. W. Goss, M.D. Sec., Roxbury, Mass.; A. H. Johnson, M.D., Prest., Salem, Mass.

MICHIGAN STATE MEDICAL SOCIETY.—Annual meeting at Flint, May 5. Charles W. Hitchcock, M.D., Sec., Detroit, Mich.; George E. Ranney, M.D., Prest., Detroit, Mich.

MINNESOTA STATE MEDICAL SOCIETY.—Annual meeting at St. Paul, June 15. Chas. B. Whitherle, M.D., Sec., Endicott Arcade Bldg., St. Paul, Minn.; Park Ritchie, M.D., Prest., St. Paul, Minn.

MEDICAL ASSOCIATION OF MISSOURI.—Annual meeting at Pertle Springs, Johnson Co., May 17. L. A. Berger, M.D., Rec. Sec., Kansas City, Mo.; T. F. Prewitt, M.D., Prest., St. Louis, Mo.

MEDICAL ASSOCIATION OF MONTANA.—Annual meeting at Butte, April 20. G. H. Barbour, M.D., Cor. Sec., Helena, Mont.; J. H. Owings, M.D., Prest., Deer Lodge, Mont.

NEW HAMPSHIRE MEDICAL SOCIETY.—Annual meeting at Concord, June 20. G. P. Conn, M.D., Sec., Concord, N. H.; M. W. Russell, M.D., Prest., Concord, N. H.

NEW YORK STATE MEDICAL ASSOCIATION.—Annual meeting at New York, November 15. E. D. Ferguson, M.D., Sec., Troy, N. Y.; J. B. Andrews, M.D., Prest., Buffalo State Hospital, Buffalo, N. Y.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—Annual meeting at Albany, Feb. 7, 1893. F. C. Curtis, M.D., Sec., 17 Washington Ave., Albany, N. Y.; A. Walter Suiter, M.D., Prest., cor. Court and Main Sts., Herkimer, N. Y.

MEDICAL SOCIETY OF NEW JERSEY.—Annual meeting at Atlantic City, June 28. W. Elmer, M.D., Cor. Sec., Trenton, N. J.; E. J. Marsh, M.D., Prest., Paterson, N. J.

NEBRASKA STATE MEDICAL SOCIETY.—Annual meeting at Omaha, May 10. L. A. Merriam, M.D., Cor. Sec., 15th and Furman Sts., Omaha, Neb.; Charles Inches, M.D., Prest., Scribner, Neb.

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.—Annual meeting at Wilmington, May 24. J. M. Hays, M.D., Sec., Oxford, N. C.; Wm. T. Cheatham, M.D., Prest., Wilmington, N. C.

THE OHIO STATE MEDICAL SOCIETY.—Annual meeting at Cincinnati, May 3. T. V. Fitzpatrick, M.D., Sec., Cincinnati, O.; G. A. Collamore, M.D., Prest., Toledo, O.

OREGON STATE MEDICAL SOCIETY.—Annual meeting at Portland, June 2. F. Cauthorn, M.D., Prest., Portland, Ore.; C. H. Wheeler, M.D., Sec., Portland, Ore.

THE STATE MEDICAL SOCIETY OF PENNSYLVANIA.—Annual meeting at Harrisburg, May 17. Samuel L. Kurtz, M.D., Prest., Reading, Pa.; Wm. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa.

RHODE ISLAND MEDICAL SOCIETY.—Annual meeting at Providence, June 2. William H. Palmer, M.D., Prest., Providence, R. I.; George D. Hersey, M.D., Cor. Sec., Providence, R. I.

SOUTH DAKOTA MEDICAL SOCIETY.—Annual meeting at Salem, June 8. M. Ware, M.D., Prest., Salem, So. Dak.; W. C. Warne, M.D., Sec., Mitchell, So. Dak.

SOUTH CAROLINA MEDICAL ASSOCIATION.—Annual meeting at Georgetown, April 28. J. R. Bratton, M.D., Prest., Yorkville, S. C.; Mozyck Ranluel, M.D., Cor. Sec., 103 Wood St., Charleston, S. C.

TENNESSEE STATE MEDICAL SOCIETY.—Annual meeting at Knoxville, April 12. J. W. Pierce, M.D., Prest., Humboldt, Tenn.; D. E. Nelson, M.D., Sec., Chattanooga, Tenn.

THE TEXAS STATE MEDICAL ASSOCIATION.—Annual meeting at Tyler, April 26. W. H. Wilkes, M.D., Prest., Waco, Texas; H. A. West, M.D., Sec., Galveston, Texas.

VERMONT STATE MEDICAL SOCIETY.—Annual meeting at Montpelier, October 14. C. S. Caverly, M.D., Prest., Rutland, Vt.; D. C. Hawley, M.D., Sec., Burlington, Vt.

MEDICAL SOCIETY OF VIRGINIA.—Annual meeting at Luray, October 1. H. Grey Latham, M.D., Prest., Lynchburg, Va.; J. F. Winn, M.D., Cor. Sec., 714 E. Franklin St., Richmond, Va.

THE MEDICAL SOCIETY OF THE STATE OF WASHINGTON.—Annual meeting at North Yakima, May. H. C. Wilson, M.D., Prest., Port Townsend, Wash.; Geo. S. Armstrong, M.D., Sec., Olympia, Wash.

MEDICAL SOCIETY OF WEST VIRGINIA.—Annual meeting at Clarksburg, West Virginia, in May, 1892. C. Shriver, M.D., Prest., Bethany, West Virginia; D. Mayer, M.D., Secretary, Charleston, West Virginia.

THE WISCONSIN STATE MEDICAL SOCITY.—Annual meeting at Milwaukee, May 4. George F. Witter, M.D., Prest., Grand Rapids, Wis.; Charles S. Sheldon, M.D., Cor. Sec., Madison, Wis.